United States Court of Appeals

for the Second Circuit

APPENDIX

ORIGINAL

75-7441

United States Court of Appeals

For the Second Circuit

AMERICAN SMELTING & REFINING COMPANY,
Plaintiff,

against

S.S. IRISH SPRUCE, her engines, tackle, etc.,
Defendant,

against

IRISH SHIPPING LTD.,
Defendant-Appellant.

In the Matter of the Complaint of IRISH SHIPPING LTD., Plaintiff as Owner of the S.S. "IRISH SPRUCE", for exoneration from or limitation of liability,

COMPANIA PERUANA DE VAPORES, S.A.,
Claimant-Appellant.

ON APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE SOUTHERN DISTRICT OF NEW YORK

JOINT APPENDIX

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PAGINATION AS IN ORIGINAL COPY

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RELEVANT DOCKET ENTRIES

72 Civ. 656

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

AMERICAN SMELTING AND REFINING COMPANY,
Plaintiff,

against

S.S. IRISH SPRUCE, HER ENGINES, TACKLE, ETC.,

and against

IRISH SHIPPING LTD.

Defendants.

Relevant Docket Entries (72 Civ. 656)
(Pages A-C

Date	Proceedings
Feb.	14-72—Filed Complaint. Issued Summons.
April	12-72—Filed summons with marshal's return. Served Irish Shipping Ltd. by Mr. Santara on 4/6/72.
July	27-73—Filed deft. Findings of Fact and Conclusions of Law.
Dec.	12-73—Pre-trial conference held by Schreiber, Mag.
Dec.	19-73—Filed consent and pre-trial order and the above actions are hereby consolidated for all purposes. Frankel, *J.*
Dec.	19-73—Filed trial memorandum submitted on behalf of Irish Shipping, Ltd.
Dec.	19-73—Filed pre-trial memorandum on behalf of claimant Compania Peruana De Vapores.

Date	Proceedings
Dec. 19-73	Filed findings of fact and conclusions of law proposed by Irish Shipping Ltd., pltff. in the first above-entitled action, an action for exoneration from or limitation of liability, and deft. in the second above-entitled action; stayed by a restraining order issued in the first above-entitled action.
Dec. 19-73	Filed proposed findings of fact and conclusions of law (and brief) submitted on behalf of Cargo claimants Sprague & Rhodes Commodity Corp., et al.
Dec. 19-73	Filed proposed findings of fact and conclusions of law submitted on behalf of charterer, Compania Peruana De Vapores.
Nov. 29-73	Pre-trial conference held—Schreiber, U.S. Mag.
Jan. 28-74	Filed Memorandum—these cases (related case 72 Civ. 3199) are referred to Hon. Gerard L. Goettel, U.S. Mag. as Special Master to hear and report, the parties having consented to this procedure. It is so ordered —Frankel, *J.* (mailed notice).
Jan. 30-74	Filed Notice that attys for Irish Shipping Ltd. will take testimony de bene esse of Captain McMahon, on 2-14-74.
April 11-74	Filed deft. Irish Shipping Ltd. supplemental trial memorandum.
April 24-74	Pre-trial Conference Held by Goettel, U.S. Mag.
April 25-74	Pre-trial Conference Held by Goettel, U.S. Mag.

Date	Proceedings
Oct. 30-74	Filed Special Master's Report—Goettel, U.S. Magistrate.
Nov. 7-74	Filed cargo claimants Sprague & Rhodes Commodity Corp., et al notice of motion, sent to Frankel, *J.* to adopt on 11-12-74 the Special Master's report filed by Mag. Goettel on 10-30-74. Ret. 11-12-74.
Nov. 11-74	Filed stip. & order—that the time for any party to file exceptions to the report of the Special Master be extended to and including 11-25-74—and that the motion to adopt the report of the Special Master filed by Cargo claimants Sprague & Rhodes Commodity Corp., et al., retnble 11-12-74, be adjourned to a date to be fixed by the Court after the receipt of such exceptions. So ordered—Frankel, *J.*
Nov. 25-74	Filed memorandum of Irish Shipping in support of its objections to the report of the Special Master, and in opposition to the motion of pltff. American Smelting and Refining Co. for confirmation of the report.
Nov. 25-74	Filed Irish Shipping Ltd. pltff. in the first above-entitled action, and deft. and claimant of the S.S. "Irish Spruce" in the second above-entitled action objections to report of Special Master.
March 5-75	Filed Memorandum—Opinion #41989—Decision—upon the foregoing grounds, and for the narrow purpose stated, the case is remanded to the Magistrate (Goettel) for the ultimate rendering of a supplemental report. So ordered—Frankel, *J.* (m/n).

Date	Proceedings
May 9-75	—Filed Supplemental Special Masters Report —Goettel, U.S. Mag. (m/n).
May 13-75	—Filed Cargo claimants Sprague & Rhodes Commodity Corp., et al., notice of motion for an order to adopt the supplemental Special Master's Report. Ret. 5-19-75.
May 27-75	—Filed claimant Compania Peruana De Vapores objections to Special Master's supplemental report.
June 16-75	—Filed Supplemental Memorandum—Opinion #41989—Decision—for the reasons stated, settle an interlocutory judgment as recommended by the Magistrate's Report and Supplemental Report. Frankel, *J.* (m/n).
June 18-75	—Filed brief in support of Owner's objections to the supplemental report.
June 18-75	—Filed Claimants' supplemental post-trial brief concerning the issue on remand.
June 18-75	—Filed brief of Irish Shipping Ltd., owner of the S.S. "Irish Spruce" concerning the issue on remand.

Date	Proceedings
July 2-75	Filed Interlocutory Judgment—ordered that the petition of Irish Shipping Ltd. for exoneration from or limitation of liability is denied—that claimants, Sprague & Rhodes Commodities Corp, et al., recover their damages from Irish Shipping Ltd. and Compania Peruana De Vapores with interest and costs—that claimant, Compania Peruana De Vapores recover its damages from Irish Shipping Ltd., with interest and costs—and that the matter be referred to Hon. Gerald L. Goettel to ascertain and compute the amount of damages sustained, etc. Frankel, *J.* Judgment entered—7-2-75 Clerk (m/n).
July 24-75	Filed deft. Irish Shipping Co. Ltd. notice of appeal from each and every part of interlocutory judgment entered on 7-2-75. Copies to: Bigham, Englar, Jones & Houston and Haight, Gardner, Poor and Havens.

RELEVANT DOCKET ENTRIES

72 Civ. 3199

Relevant Docket Entries (72 Civ. 3199)
(Pages D-E)

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

—o—

In the Matter of the

Complaint of

IRISH SHIPPING LTD., Plaintiff, as owner of the

S.S. "IRISH SPRUCE"

Exoneration from or limitation of Liability.

—o—

Date	Proceedings
July 27-72	Filed complaint and Stip. for Costs ($250. National Surety Corp.).
July 27-72	Filed Affidavit of Value and of Pending Freight ($50,890.31).
July 31-72	Filed Order Approving Pltf's. Stipulation for Value, directing issuance of Notice and restraining suits. Ret. 9/12/72 Publish in the New York Times.
July 31-72	Filed Stipulation for Value. Approved as to form and sufficiency. Frankel, J.
Aug. 3-72	Filed pltff's notice to claimants of complaint for exoneration from or limitation of liability.

Date	Proceedings
Aug. 25-72	Filed Affidavit of Service of complaint, Notice to claimants, and order approving plaintiff's stipulation for Value, Directing Issuance of Notice and restraining suits on Ranger Insurance Co., P.O. Box 2807, Houston, Texas 77001.
Aug. 25-72	Filed Affidavit of Service of complaint, Notice to claimants, and order approving plaintiff's stipulation for value, directing issuance of Notice and restraining suits on: Bigham, Englar, Jones & Houston; Compania Peruana de Vapores, S.A.; Haight, Gardner, Poor & Havens.
Sept. 1-72	Filed Certificate of Publication of Limitation.
Sept. 12-72	Filed Claim of Sprague & Rhodes Commodity Corp. et al.
Sept. 12-72	Filed Answer of Claimants, Sprague & Rhodes Commodity Corp. et al to complaint
Sept. 12-72	Filed Answer of claimant Compania Peruana De Vapores to complaint.
Sept. 12-72	Filed Claim of Compania Peruana de Vapores.
Sept. 14-72	Filed Pltff Irish Shipping Ltd. Notice to all claimants herein of the identity of other claimants.
Nov. 27-72	Filed Cross Claim of Claimants, Sprague & Rhodes Commodity Corp., et al.

Date	Proceedings
Dec. 27-72	—Filed Answer of claimant Compania Peruana de Vapores to cross-claim of claimants Sprague & Rhodes Commodity Corp., et al.
July 27-73	—Filed defts Finding's of fact and conclusions of law.
Nov. 29-73	—Pre-trial conference held—Schreiber, U.S. Mag.
Dec. 12-73	—Pre Trial Conference Held. By Schreiber, U.S. Mag.
Dec. 19-73	—Filed trial brief on behalf of Cargo claimants Sprague & Rhodes Commodity Corp., et al.
Jan. 28-74	—These cases (72 Civ. 656) are referred to the Hon. Gerard L. Goettel, U.S. Mag., as Special Master to hear and report, the parties having consented to this procedure. It is so ordered—Frankel, J. (m/n).
Jan. 30-74	—Filed Notice that attys for Irish Shipping Ltd. will take testimony of Captain McMahon, de bene esse on 2-14-74.
April 24-74	—Pre-Trial Conference Held by Goettel, 4-24-74, U.S. Mag.
April 24-74	—Pre-Trial Conference Held by Goettel, U.S. Mag.
Nov. 7-74	—Filed Cargo claimants Sprague & Rhodes Commodity Corp. et al notice of motion to adopt on 11-19-74 the Special Master's report filed by Mag. Goettel on 10-20-74. Ret. 11-12-74.

Date	Proceedings
Nov. 25-74	—Filed claimant Compania Peruana de Vapores objections to special Master's report.
March 5-75	—Filed Memorandum-Opinion #41989—Decision (filed in 72 Civ. 656) upon the foregoing grounds, and for the narrow purpose stated, the case is remanded to the Magistrate (Goettel) for the ultimate rendering of a supplemental report. So ordered—Frankel, J. (m/n).
June 16-75	—Filed Supplemental Memorandum-Opinion #41989--Decision (filed in 72 Civ. 656).
July 2-75	—Filed Interlocutory Judgment—ordered that the petition of Irish Shipping Ltd. for exoneration from or limitation of liability is denied—that claimants, Sprague & Rhodes Commodities Corp., et al, recover their damages from Irish Shipping Ltd and Compania Peruana de Vapores with interest and costs —that claimant Compania Peruana de Vapores recover its damages from Irish Shipping Ltd. with interest and costs--and that the matter be referred to Hon. Gerald L. Goettel to ascertain and compute the amount damages sustained, and report etc. Frankel, J. Judgment entered—7-2-75 Clerk (m/n).

PRE-TRIAL ORDER

72 Civ. 656

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

In the Matter of the Complaint of IRISH SHIPPING LTD., Plaintiff, as Owner of the S.S. "IRISH SPRUCE", for exoneration from or limitation of liability.	:	72 Civ. 3199 (MLP)
AMERICAN SMELTING AND REFINING COMPANY, Plaintiff, -against- S.S. IRISH SPRUCE, her engines, tackle, etc., -and against- IRISH SHIPPING LTD., Defendants.	:	72 Civ. 656 (MLP)
	:	PRE-TRIAL ORDER

The above actions are hereby consolidated for all purposes. The parties to these actions, through their attorneys, have appeared before the Court at a pre-trial conference pursuant to local Rules 6 and 13 and Rule 16 of the Federal Rules of Civil Procedure. The following actions were taken:

1. These actions are in Admiralty pursuant to the provisions of Rule 9(h), and the jurisdiction of this Court, as between the parties, is not in dispute.

2. It has been agreed between counsel for the respective parties that the only issues raised at the trial are those of liability and of the alleged right of Irish Shipping Limited to limit its liability.

3. The parties agreed that the trial should be based upon this order and the pleadings; that there are no amendments to the pleadings.

4. (a) The parties stipulated that the following

facts are not in dispute in these actions, each party reserving the right to object to the materiality of any such stipulated fact and its relevancy to the issues:

(1) Claimants Sprague & Rhodes Commodity Corp., et al. in 72 Civ. 3199 and plaintiff American Smelting and Refining Company in 72 Civ. 656 are corporations and business organizations which were the owners of the cargoes laden on board the S.S. IRISH SPRUCE at the time that vessel stranded on Quita Sueno Bank on January 27, 1972, or are underwriters of such cargoes which, by reason of their payments, have become subrogated to the rights of such owners. Some of the cargoes were a total loss and some were salvaged and eventually taken to New Orleans.

(2) Irish Shipping Limited is a corporation organized and existing under and by virtue of the laws of the Republic of Ireland, and at the time of the loss was the owner and operator of the S.S. IRISH SPRUCE.

(3) The IRISH SPRUCE was a dry cargo vessel registered under the laws of the Republic of Ireland. She was built in England in 1957 and held the highest class of hull and machinery of Lloyd's Registry of Shipping. Her length overall was 449 feet. Her extreme breadth was 62 feet 3 inches. Her registered gross tonnage was 7,875 and her net tonnage 4,555. Her maximum sea speed was 16 knots.

(4) Compania Peruana de Vapores is a business entity organized and existing under and by virtue of the laws of the Republic of Peru, and was at the time of the stranding on January 27, 1972 the time charterer of the S.S. IRISH SPRUCE. The cargo laden on board the IRISH SPRUCE was carried pursuant to bills of lading provided by Compania Peruana de Vapores and signed by the Master.

(5) In January 1972 the S.S. IRISH SPRUCE loaded cargo at ports on the West Coast of South America, the cargo being destined for New Orleans and other United States Gulf ports. She subsequently passed through the Panama Canal on January 25, 1972 and stranded on Quita Sueno Bank at about 3:29 A.M. on January 27, 1972. The vessel and much of the cargo were totally lost. The vessel was sold "as is, where is" for $15,000.

(6) The projected course of the IRISH SPRUCE after passing through the Panama Canal was Northerly toward the Yucatan Pass, so as to pass between Roncador Bank and Serrana Bank to the East, and Isla San Andres, Isla de Providencia and Quita Sueno Bank to the West. Quita Sueno Bank lies about 120 miles East of the coast of Nicaragua in the Caribbean Sea.

(7) A fixed 1200 Noon position was obtained on the 26th from observations by the Second Officer. At 2400 on the 26th the IRISH SPRUCE changed course from 323° T. to 330° T. and remained on this course until the time of stranding at 0359 on the 27th.

(8) The IRISH SPRUCE was equipped with a British Decca Navigator (electronic position finding device). The vessel was not equipped with an American LORAN (electronic position finding device).

(9) The IRISH SPRUCE was equipped with the British Admiralty system of publications and materials and it was the regular practice on the IRISH SPRUCE to use the British Admiralty sailing directions for the areas through which the vessel sailed. The IRISH SPRUCE did not maintain a full set of nautical publications from any other nation.

(10) The Sailing Directions which the IRISH SPRUCE was equipped with for this area was the "West Indies Pilot, Volume I, Eleventh Edition, 1956", plus Supplement No. 6 - 1968, published by the British

Admiralty.

(11) The IRISH SPRUCE was equipped with the Admiralty List of Radio Signals, Volume II, 1969, published by the British Admiralty.

5. (a) Plaintiff Irish Shipping Limited, as owner of the S.S. IRISH SPRUCE, contends:

The stranding was caused by errors in navigation compounded by the unstable currents in the waters traversed by the IRISH SPRUCE approaching Quita Sueno Bank. Plaintiff used due diligence to make the vessel seaworthy prior to sailing and the vessel was in fact in all respects seaworthy. The details of plaintiff's contentions are set forth at length in the proposed findings of fact and conclusions of law.

5. (b) Claimants (72 Civ. 3199) and plaintiff (72 Civ. 656), cargo owners and underwriters, contend:

Irish Shipping Limited, as owner and operator, and Compania Peruana de Vapores, as time charterer, of the S.S. IRISH SPRUCE, failed to exercise due diligence to make the vessel in all respects safe and seaworthy prior to the inception of the voyage, in that the vessel was not equipped with the necessary nautical publications for navigation in the western Caribbean Sea, and that the stranding and resulting loss, damage and expense to cargo were directly caused as a result thereof. The details of claimants' contentions are set forth at length in the proposed findings of fact and conclusions of law.

5. (c) Claimant Compania Peruana de Vapores contends:

The stranding was caused by errors in navigation, and the IRISH SPRUCE was seaworthy. If the Court should find that the stranding was caused by unseaworthiness and that plaintiff shipowner failed to

exercise due diligence to make the IRISH SPRUCE seaworthy, and if as a result of such findings claimant Compania Peruana de Vapores is held liable to cargo claimants, then by virtue of the terms of the timecharter claimant Compania Peruana de Vapores is entitled to be indemnified by plaintiff on account of such liability to cargo and to recover the value of claimant Compania Peruana de Vapores' bunkers, stores, and equipment aboard the IRISH SPRUCE at the time of the stranding, and plaintiff is not entitled to limit its liability to claimant Compania Peruana de Vapores.

6. (a) Plaintiff Irish Shipping Limited expects to offer the following exhibits:

Ex. 1	(Dep. Ex. A)	Ink Smooth Deck Log
Ex. 2	(Dep. Ex. B)	Carbon copy (Jan. 20/Jan. 30, 1972)
Ex. 3	(Dep. Ex. C)	B.A. Chart 762
Ex. 4	(Dep. Ex. D)	B.A. Chart 1300
Ex. 5	(Dep. Ex. E)	B.A. Chart 396
Ex. 6	(Dep. Ex. F)	B.A. Chart 1218
Ex. 7	(Dep. Ex. G)	W. I. Pilot
Ex. 7a	(Dep. Ex. G-1)	Supp. Pilot 1968
Ex. 8	(Dep. Ex. H)	8 B.A. N/M's 9 U.S. N/M's
Ex. 9	(Dep. Ex. I)	Ocean Passages
Ex. 9a	(Dep. Ex. I-1)	Ocean Passages 5305
Ex. 10	(Dep. Ex. J)	Radio Signals Book
Ex. 10a	(Dep. Ex. J-1)	p. 5491 CHR.
Ex. 11	(Dep. Ex. K)	Radar Repair Sheets 15/12/71
Ex. 11a	(Dep. Ex. K-1)	30/1/72
Ex. 11b	(Dep. Ex. K-2)	30/Sept. 1971
Ex. 12	(Dep. Ex. L)	Light List
Ex. 12a	(Dep. Ex. L-1)	Batch of Light Supplements
Ex. 13	(Dep. Ex. M)	Official Log No. 3 12/26/71 - 1/27/72
Ex. 14	(Dep. Ex. N)	Official Log No. 4
Ex. 14a	(Dep. Ex. N-1)	Typed supp.
Ex. 15	(Dep. Ex. O)	Time Signal Bk.
Ex. 16	(Dep. Ex. P)	Capacity Plan
Ex. 17	(Dep. Ex. Q)	Cargo Plan
Ex. 18	(Dep. Ex. R)	Custom's Manifest (U.S.) (7) (Plus 3 Metarini)
Ex. 19	(Dep. Ex. S)	Crew List (2 pp.)
Ex. 20	(Dep. Ex. T)	B/L's (22)
Ex. 21	(Dep. Ex. U)	Copy of Certificate of Registry
Ex. 22	(Dep. Ex. V)	Copy of Official Crew List
Ex. 23	(Dep. Ex. W)	Copy of RDF Connection Curve
Ex. 24	(Dep. Ex. X)	Barometric Pressure Graph
Ex. 25	(Dep. Ex. Y)	Loadline Certificate (with pencil figures)
Ex. 26	(Dep. Ex. Z)	Copy of New Loadline Certificate
Ex. 27	(Dep. Ex. AA)	Copy of Radio Officer's Reporting Form

Dx. 29	(Dep. Dx. PP)	Certified Dev. Card (Copy)
Dx. 29A	(Dep. Dx. PP-1)	Certified Dev. Certificate Card (Copy)
Dx. 29	(Dep. Dx. QQ)	Certified Dev. Card (Copy) Feb. 1963
Dx. 29a	(Dep. Dx. QQ-1)	Certified Dev. Card (Copy) 27 July 63
Dx. 30	(Dep. Dx. RR)	Copy of NDT Verification of Calculation
Dx. 31	(Dep. Dx. SS)	Copy of Extract of Engineer's Logbook
Dx. 32	(Dep. Dx. TT)	Copy of Magnetic Compass 3357 and Certificate of Compass
Dx. 32a	(Dep. Dx. TT-1)	Certificate
Dx. 32b	(Dep. Dx. TT-2)	Certificate
Dx. 33	(Dep. Dx. UU)	Copy of radio log from Panama to Jan. 30th
Dx. 34	(Dep. Dx. VV)	D.A. Chart 1204
Dx. 35	(Dep. Dx. WW)	Dock Bridge Toll Book (dues outstanding entries)
Dx. 36	(Dep. Dx. XX)	Dockings Book (copy of strand entry)
Dx. 37	(Dep. Dx. YY)	Engine Im. Bellbook (copy) 20th & 27th
Dx. 38	(Dep. Dx. ZZ)	Almanac
Dx. 39	(Dep. Dx. AAA)	Compass Deviation Book
Dx. 40	(Dep. Dx. BBB)	Weather Reporting Book (copies)
Dx. 40a	(Dep. Dx. BBB-1)	Reporting form
Dx. 41	(Dep. Dx. CCC)	Depth Sounder Graph
Dx. 42	(Dep. Dx. DDD)	Charter Party
Dx. 43	(Dep. Dx. EEE)	Pictures
Dx. 43a	(Dep. Dx. EEE-1)	"
Dx. 43b	(Dep. Dx. EEE-2)	"
Dx. 44	(Dep. Dx. FFF)	Note of Protest
Dx. 45	(Dep. Dx. SS)	Copies of 29th August, 1971
Dx. 45a	(Dep. Dx. SS-1)	Copies of 30th August, 1971
Dx. 45	(Dep. Dx. TT)	Copies of Oct. 2nd 1971
Dx. 47	(Dep. Dx. UU)	Master's Statement (handwritten original) (copy)
Dx. 47a	(Dep. Dx. UU-1)	Typed Statement
Dx. 48	(Dep. Dx. VV)	Columbian Questions in Spanish (copy)
Dx. 49	(Dep. Dx. WW)	Marine Notice - 1 , of 1966 Dept. of Transport & Power
Dx. 49a	(Dep. Dx. WW-1)	Addendum
Dx. 49b	(Dep. Dx. WW-2)	Oct. 24, 1967 letter
Dx. 50	(Dep. Dx. XX)	Current Ch. Jan. 1970
Dx. 50a	(Dep. Dx. XX-1)	Jan. 1971
Dx. 50b	(Dep. Dx. XX-2)	Dec. 1971
Dx. 50c	(Dep. Dx. XX-3)	Feb. 1970
Dx. 51	(Dep. Dx. YY)	Current Chart Nov. 1971
Dx. 52	(Dep. Dx. ZZ)	Photocopy of Healy's book(entire)
Dx. 53	(Dep. Dx. AAA)	Noon position documents (38) Ch. Log Slips (25)
Dx. 54	(Dep. Dx. BBB)	Course Recorder Graph
Dx. 55	(Dep. Dx. CCC)	Healy's Calculation Book
Dx. 56	(Dep. Dx. DDD)	Healy's Plot of wreck
Dx. 57	(Dep. Dx. EEE)	Healy's Grid of ship and bank
Dx. 58	(Dep. Dx. FFF)	Healy's enlarged chart 1218
Dx. 59	(Dep. Dx. GGG)	Healy's statement
Dx. 60		Depositions of Marr, Kelly, Murphy & Mills
Dx. 61		Depositions of Healy & O'Connor
Dx. 62		Standing Orders
Dx. 63		Night Order Book

6. (b) Claimants expect to offer the following exhibits:

Dx. A.	N.O. Chart 26031
Dx. B	N.O. Chart 26030

Dx. C — New L.A. Chart 1218
Dx. D — East Coasts of Central America and Gulf of Mexico Pilot, First Edition, 1970. (British)
Dx. E — Admiralty List of Radio Signals Volume 2, 1971 (British)
Dx. F — Certificate from the Hydrographer of the Navy. (British)
Dx. G — Sailing Directions for the East Coasts of Central America and Mexico (H.O.Pub. 20) (U.S.A.)
Dx. H — Radio Navigational Aids (H.O.Pub.117A) (U.S.A.)
Dx. I — Capt. James McGinly deposition and exhibits
Dx. J — Capt. Joel Crayman's deposition and exhibits
Dx. K — Various IMCO manuals
Dx. L — Admiralty List of Lights Vol. J., 1971. (British)
Dx. M — Chart H.O. 26031
Dx. N — Deposition of Capt. Lowell and exhibits

6. (c) Compania Italiana de Vapores expects to rely upon the exhibits offered by the plaintiff.

Except as indicated below, it is stipulated that the above listed exhibits in paragraphs 6(a), (b) and (c) are authentic and may be received into evidence, subject to objections on grounds of materiality or relevance. This stipulation does not apply to exhibits (F) and (K) which have not yet been received, and to (I) and (J) which are depositions (with attached exhibits) which have not yet been transcribed (I) or taken (J). A further stipulation with respect to these proposed exhibits will be entered into if possible.

Should any party hereinafter offer additional exhibits, prompt notice of that fact shall be given to each other party and to the Court by serving and filing a supplemental pretrial memorandum. Supplemental pretrial memorandum may be in a short form statement filed with the Deputy Clerk of Calendars unless served at trial when it is to be filed with the Trial Judge. It shall set forth the reasons why the exhibit was not theretofore identified. No exhibit may be offered at trial unless identified by a pretrial memorandum.

7. (a) Irish Shipping Limited expects to call the following witnesses:

(1) Capt. J. S. Kerr (Master of IRISH SPRUCE)
(2) 2nd Officer Francis Healy
(3) Capt. Austin Cushman (Navigation and RDF)
(4) RDF expert

7. (b) Claimants expect to call the following witnesses:

(1) Capt. R. O. Patterson (Navigation and RDF)
(2) RDF Expert
(3) Masters and officers of other vessels which have transited the area in question.

7. (c) Compania Peruana de Vapores expects to rely upon the witnesses called by the plaintiff.

Should any party hereafter decide to call any additional witnesses, prompt notice of their identity shall be given to each other party and to the Court by serving and filing a supplemental pretrial memorandum. The supplemental pretrial memorandum shall be in a short form statement filed with the Deputy Clerk of Calendars unless served at trial when it is to be filed with the Trial Judge. It shall set forth the reason why the witness was not theretofore identified. No witness may be called at trial unless identified in a pretrial memorandum.

8. The following are all of the claims for damage and for other relief asserted by the parties to this action:

(a) The claims by cargo claimants, inclusive of physical loss, salvage awards and on-carriage expenses exceed $2,000,000.

(b) Irish Shipping Limited, as Owner of the S.S. IRISH SPRUCE, claims the right of exoneration from or limitation of liability pursuant to the United States Limitation of Vessel Owners Liability Act, Secs. 4282, 4283, 4284 and 4285 of the Revised Statutes of the United States, and the statutes supplementary and Amendatory thereto.

(c) Compania Peruana de Vapores, as time charterer of the S.S. IRISH SPRUCE, claims indemnity over against Irish Shipping Limited for any amount which it may be held liable to pay cargo claimants, and further claims recovery from Irish Shipping Limited for the value of Compania Peruana de Vapores' bunkers, stores and equipment aboard the IRISH SPRUCE at the time of the stranding.

9. The issues to be tried as formulated by the Court with the consent and agreement of the parties are as follows:

(a) Was the stranding of the S.S. IRISH SPRUCE caused or contributed to by any actionable breach of the contract of affreightment or negligence on the part of either Irish Shipping Limited or Compania Peruana de Vapores to which there is no defense under the terms of the contract of affreightment or at law or by applicable statute.

(b) To what extent, if any, is Irish Shipping Limited or Compania Peruana de Vapores liable to the owners and underwriters of the cargo laden on board the S.S. IRISH SPRUCE at the time the vessel stranded.

(c) In the event that Compania Peruana de Vapores is held liable to pay all or any part of the damage sustained by the owners or underwriters of the cargo laden on board the IRISH SPRUCE, is Compania Peruana de Vapores entitled to be indemnified by Irish Shipping Limited.

(d) If Irish Shipping Limited is liable, is it entitled to limit its liability pursuant to the United States Limitation of Vessel Owners Liability Act, Sections 4282, 4283, 4284 and 4285 of the Revised Statutes of the United States and the statutes supplementary and amendatory thereto.

(c) If so, what is the amount of Irish Shipping Limited's limitation fund.

10. The parties also agree to the following matters:

The parties at this time expect to require three (3) trial days (non-jury).

Trial shall be limited to issues of liability, limitation of liability, and indemnity. Issues of damage to be reserved.

Trial counsel for Irish Shipping Limited are as follows:

Allan A. Maillie, Esq.
John C. Koster, Esq.

Trial counsel for cargo claimants are as follows:

Douglas A. Jacobsen, Esq.
Francis M. O'Regan, Esq.

Trial counsel for Compania Peruana de Vapores are as follows:

Richard G. Ashworth, Esq.
David D. Kovitski, Esq.

Dated: New York, N.Y.

October , 1973

SO ORDERED:

_____
U. S. D. J.

CONSENTED TO:

_____
HEALY & BAILLIE
Attorneys for Irish Shipping Limited
29 Broadway
New York, N.Y. 10006

[illegible]
Attorneys for [illegible] Claimants,
[illegible] & Andes Commodity Corp.,
et al.
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de Vapores
One State Street Plaza
New York, N.Y. 10004

TRANSCRIPT OF HEARING

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

IN THE MATTER OF THE Complaint of IRISH SHIPPING LTD., Plaintiff, an Owner of the S.S. "IRISH SPRUCE", for exoneration from or Limitation of Liability.	:	72 Civ. 319 (MEF)
AMERICAN SMELTING AND REFINING COMPANY, Plaintiff, -against- S.S. IRISH SPRUCE, her engines, tackle, etc., -and against - IRISH SHIPPING LTD., Defendants.	:	72 Civ. 656 (MEF)

BEFORE:

MAGISTRATE GERARD L. GOETTEL, at the offices of the UNITED STATES COURTHOUSE, FOLEY SQUARE, New York, on April 24, 1974 at 10:00 A. M. before Howard Chaim, a Certified Shorthand Reporter and Notary Public of the State of New York.

APPEARANCES:

HEALY & BAILLIE, ESQS.,
Attorneys for Irish Shipping Limited
29 Broadway
New York, N. Y. 10006

BY: ALLAN A. BAILLIE, ESQ.,
JOHN C. KOSTER, ESQ.,
Of counsel

BIGHAM, ENGLAR, JONES & HOUSTON, ESQS.,
Attorneys for Cargo Claimants, Sprague & Rhodes
Commodity Corp., et al
99 John Street
New York, N. Y. 10038

BY: DOUGLAS A. JACOBSEN, ESQ.,
FRANCIS M. O'REGAN, ESQ.,
Of counsel

HAIGHT, GARDNER, POOR & HAVENS, ESQS.,
Attorneys for Compania Peruna de Vapores
One State Street Plaza
New York, N. Y.,

BY: DAVID E. NOVITSKI, ESQ.,
Of Counsel.

THE COURT: Are you all prepared to proceed?

MR. O'REGAN: Yes, your Honor.

MR. BAILLIE: Yes, your Honor.

THE COURT: For my own reference I would like to note down counsel for the various parties.

Who will be leading trial counsel for Bigham, Englar?

MR. JACOBSEN: Douglas Jacobsen, your Honor and Francis O'Regan is with me.

THE COURT: And for Healy and Baillie?

MR. BAILLIE: Allan Baillie and John Koster.

MR. NOVITSKI: Haight, Gardner, David Novitski.

THE COURT: Is Mr. Ashworth going to be with you?

MR. NOVITSKI: No, he will not.

THE COURT: I have read your pretrial memo, pretrial order and everything you submitted to date, and I am prepared to commence taking testimony unless any of you believe that an opening statement is in order.

MR. BAILLIE: I don't think it is necessary, your Honor, but we do have one correction to the pre-

trial order.

MR. JACOBSEN: On page 3 of the pretrial order, the middle of the page.

THE COURT: I have noted that error.

MR. JACOBSEN: It is 330 to 323.

THE COURT: There is another error there, too. If you look at paragraph 5 on that page it speaks of the time as being 3:29. But in paragraph 7 it says 3:59. The same error appears in one of the trial memos. I believe 29 is correct.

MR. JACOBSEN: 29 and a half actually.

THE COURT: The change in course was from 330 to 332?

MR. BAILLIE: 323. Just the reverse.

MR. JACOBSEN: The numbers are right. They are just reversed.

THE COURT: Just reverse order, all right. Something else in the pretrial order does seem right. It is just a technical error that creeps in by using the old form where you speak of not calling any witness or using any exhibits unless they are identified in a pretrial memorandum when in fact you list most of them in the pretrial order. I assume that's what it meant.

MR. BAILLIE: No, I think that what we meant

was supplemental exhibits.

THE COURT: I understand that it follows the supplemental aspect.

MR. BAILLIE: We have a great many exhibits to introduce. Mostly they are stipulated as being admissible.

THE COURT: Can we pile them in some place where they will be accessible and would not get confused with each other.

It occurred to me that it might have served some purpose had I read the deposition transcripts. I will try to get to it during the next day or two.

MR. BAILLIE: We have two witnesses who testified on depositions and they are here and will explain basically what happened, the facts of it.

Do you want us to read for the record the various exhibits and have them marked? We have tags on most of them.

THE COURT: Most of these are going in by stipulation as to authenticity.

MR. BAILLIE: Yes. But some of them will not.

THE COURT: Well, suit yourself as to what

you do with those as to which there is no objection. You can either do it by a stipulation and have it marked or you can read it into the record if you want to.

MR.BAILLIE: Suppose I present this list with the number here and a description of what it is and a reference to the exhibit number on the depositions, and if the court reporter could take that and we can agree that these are admissible until we get down to the depositions, perhaps that would speed things up.

MR. JACOBSEN: It is agreeable with me. I have no objection, I don't believe, to any of these exhibits.

MR. BAILLIE: The only possible question comes to mind are the depositions of Chief Officer Kelly and second officer Healy, both of whom are here to testify.

As far as I am concerned, it is perfectly all right with to have them admitted in evidence.

MR. JACOBSEN: I would like to offer them in evidence.

MR. BAILLIE: The other question here concerns exhibit 66, the deposition of Captain McMahon.

We will only offer that exhibit if your Honor admits the depositions of several captains of the U. S. Lines Fleet who carried on various experiments aboard their ships on the RDF bearing down in the Caribbean Sea.

THE COURT: Why don't you wait and see how that goes before you make your offer on that.

MR. BAILLIE: We will offer all of these except -- and Mr. Jacobsen has offered 62 and 64, and we agree they can go in. We are not offering at this time exhibit 66.

MR. JACOBSEN: We will offer exhibit 66 outselves.

MR. BAILLIE: Then we come to the argument. You see, I am contending that the testimony of the various people that were taken by deposition by Mr. Jacobsen's office is remote and has nothing to do with the situation as it existed at the time that they would have had us take a bearing, which is the time we were going from the canal to New Orleans.

What are we going to do?

MR. JACOBSEN: We offer Captain McMahon's deposition and also the other three, Gregware, Lowell and McGinty on the basis that his testimony and exhibits show that this radio station, the radio

beacon at Isla San Andres is at least useful. As a matter of fact, Captain McMahon testified that it was the same in 1972 as it was on this recent voyage.

THE COURT: I don't see anywhere that I can rule on that without actually reading the deposition and to some degree hear other testimony first. I will read it tonight or tomorrow night and then rule on its admissibility at that point.

MR.BAILLIE: It would only be admissible, it seems to me, if there were proof on the record, and as far as I know, there is no such proof, that the station was in operation on the 26th of January, 1972; that the weather conditions under which the various observations by these other people were precisely the same; that there had been no change in the station since then. All these matters go to determine their adminissibility.

MR.JACOBSEN: We will offer exhibit E, which is the up to date admiralty list of radio signals as evidence of the existence and operation of the radio beacon at Isla San Andres, and this is the document that was current, was up to date at the time of the Irish Spruce casualty.

THE COURT: I don't understand that to be

the objection. As I understand the objection, it is not to the fact that the beacon was not listed, but that unless you establish that they were within range of the beacon and that the beacon was in fact operating on the occasion when you allege it could have been used, and that the weather conditions, distance, time and so on were such that it would have been of some navigational assistance, that all the rest of it is irrelevant.

Do I correctly state your position?

MR. BAILLIE: That's exactly it.

MR. JACOBSEN: I think it is the other way around. This is the up to date publication. This shows that this station operates continuously.

MR. BAILLIE: It doesn't say that.

MR. JACOBSEN: It's listed as continuously and there is no notice to mariners or anything changing that. And indeed their own witness said it operated the same in 1972 as in 1974.

If that station they say was not operating, they should so prove it.

THE COURT: Does it give the range of the beacon and does it give different ranges day and night?

MR. JACOBSEN: No.

MR. BAILLIE: We have no objection to the signal book going in.

MR. JACOBSEN: We have Captain MacNally, an expert witness on that subject.

THE COURT: Obviously those exhibits which are not objected to will be received in evidence and those are numbers --

MR. BAILLIE: Numbers 1 through 68 with the exception of 66.

THE COURT: It is 1 through 65, 67 and 68. And these are the Irish Spruce's exhibits or both of your exhibits?

MR. BAILLIE: Plaintiff's exhibits.

You understand we are not nominally plaintiffs.

THE COURT: In fact, there is a second action in which you are a defendant which has been consolidated.

MR. BAILLIE: That's been stayed.

THE COURT: It is listed here as being consolidated.

MR. BAILLIE: It was originally stayed.

THE COURT: It was stayed and then con-

solidated.

MR. BAILLIE: It doesn't really make much difference.

THE COURT: Are the numberings you have here consistent with the pretrial order?

You have changed this listing here towards the end. You get down to 60, you listed four depositions under 60 in the order and you have given them separate numbers here.

MR. BAILLIE: We thought, your Honor, that it would be more convenient for you if all the depositions were separated and numbered differently. In case there is any problem about what we have now numbered 62 and 64 --

THE COURT: Is it agreeable then to use this list which you have just handed up rather than the numbering order used in the pretrial order for the exhibits?

MR. JACOBSEN: Yes, your Honor.

THE COURT: Of the exhibits listed on this list the only one which is not presently being received in evidence is number 66; is that correct?

MR. BAILLIE: Yes.

THE COURT: Let's have the reporter mark

this as being a listing of exhibits received in evidence. Mark it as Court's Exhibit A.

(Court's Exhibit A received in evidence.)

MR. O'REGAN: At this time Cargo Claimant would offer all the exhibits listed in the pretrial order.

THE COURT: Are there any additional ones in a supplemental memorandum?

MR. O'REGAN: Yes, sir. Before we get to that I'd like to mention on Exhibit G, which is the sailing directions for east coast of Central America and Mexico should add to that and change 12. That's also inserted in the publication. And Exhibit K consists really of three Marconi RDF manuals, and I think for the sake of order we should call them K1, K2 and K3 rather than just exhibit K.

THE COURT: You put tabs on all these exhibits?

MR. O'REGAN: Yes, sir.

THE COURT: The same letters that you are using for Irish Spruce is the same that's used in exhibit A and for Cargo Claimants as numbered in the pretrial order in your supplemental pretrial memorandum?

MR. O'REGAN: Correct. One correction. Exhibit M rather than reading as it is now indicated in the pretrial order as 026081 should read 026000.

THE COURT: 26000?

MR. O'REGAN: Yes, sir.

THE COURT: That's Exhibit M?

MR. O'REGAN: Correct.

MR. BAILLIE: Then M and B are the same thing.

MR. O'REGAN: They are the same chart numbers, but different exhibits.

MR. JACOBSEN: The earlier one was marked at the depositions in Dublin? It was a rough copy. The only reason the other one is offered is because it is a smooth copy.

MR. BAILLIE: This brings up the question of --

THE COURT: What objections do you have to the exhibits they are offering the exhibits are numbered A through Z and then again starting with AA so we should have a total of 27 exhibits.

To which do you take objection?

MR. BAILLIE: We object of course to Exhibit I, Exhibit J and Exhibit N.

THE COURT: N?

MR. BAILLIE: Yes. We already objected to Exhibit Q, unless the others are allowed in.

Now, I also cannot see the reason for marking Exhibit R and Exhibit S as exhibits. They are admittedly authorities to whom counsel can refer and your Honor can refer, but they are certainly not exhibits of anything--not evidence of anything.

MR. JACOBSEN: It might facilitate things to have a letter on them.

THE COURT: I don't think it matters much either way.

MR. JACOBSEN: These are the up to date editions.

THE COURT: I think they should be up to date as of the date of the stranding, not necessarily after that.

MR. JACOBSEN: It just so happens they are both.

THE COURT: Mr. Baillie, we will allow them to be marked as R and S. I will treat them as authorities and not as exhibits as such.

MR. JACOBSEN: One thing, on Exhibit X, we don't offer that yet until Mr. MacNally should

testify.

THE COURT: Any other exhibits?

MR. BAILLIE: What did you say, you are not going to offer X?

MR. JACOBSEN: No. When he testifies.

MR. BAILLIE: The same would be true of U then.

THE COURT: You want to hold that also?

MR. JACOBSEN: We don't care about that.

MR. BAILLIE: Also of course Captain Patterson is to testify so he can take his own resume here in Court. We see no purpose in that.

THE COURT: Any further objections?

MR. BAILLIE: Exhibit AA, what is that? We haven't seen some of these.

MR. JACOBSEN: AA is a page out of HO Pub number 220, Navigation Dictionary.

MR. BAILLIE: This is the same situation as Bowditch and Dutton; is it not?

MR. JACOBSEN: It is essentially the same. I think they are admissible. It doesn't make much difference.

MR. BAILLIE: I don't have any objection.

THE COURT: Does that complete your objec-

tions, Mr. Baillie?

MR. BAILLIE: Yes.

THE COURT: We will receive in evidence for Cargo Claimants exhibit A, B, C, D, E, F, G, H, K, L, M, O, P, V, W, Y and Z.

(Cargo Claimants Exhibits A, B, C, D, E, F, G, H, K, L, M, O, P, V, W, Y, Z received in evidence.)

THE COURT: We will mark Exhibits R, S and AA, which are standard authorities, and they will be used as such rather than as exhibits per se, and we have objections and subsequent rulings necessary on Exhibits I, J, and Q, and there has been no offer at this time of Exhibits T, U and X. All of these letters have been drawn from the pretrial order and the supplemental pretrial memo.

I want you to pile them in some manner so when I have occasion to after court I can find them in the proper order.

MR. BAILLIE: We will leave them all on the table.

THE COURT: Why don't you do that here. Try to have them in numerical and alphabetical order.

MR. BAILLIE: I wonder if your Honor would

be willing to give us some idea of your schedule.

THE COURT: Normally I sit 10 to one and two to five. This can be adjusted if there is any need to.

MR. BAILLIE: It is fine with me.

Shall we proceed with the evidence now?

Mr. Healy.

- - -

F R A N C I S E D W A R D H E A L Y,

sworn by the Court.

THE COURT: Would you state your name and address.

THE WITNESS: Francis Edward Healy, Greenways, Ballin Temple, Blackrock Road, Cork.

DIRECT EXAMINATION

BY MR. BAILLIE:

Q What is your vocation?

A Ship's navigator.

Q Are you a ships officer too?

A Yes, sir.

Q Will you give us some of your background, your sailing experience?

A I began with Irish Shipping as an apprentice in November of 1964. I was an apprentice with them

until I got my second mate's ticket, which was in January of 1969. I have sailed with them since as an officer. I got my first mate's foreign going in August of 1970.

Q Am I correct that under British and Irish procedures or laws or rules you don't have a third mate as such?

A Yes.

Q You get your second mate's license immediately?

A Yes.

Q Now, you indicated you are employed by Irish Shipping Ltd.?

A Yes.

Q And the owner of the Irish Spruce?

A Yes.

Q Were you aboard the Irish Spruce on the voyage that she stranded on Quita Sueno Bank?

A Yes.

Q What position did you have on the vessel?

A Second mate.

Q And second mate's duties are what, were what?

A Second mate's duties was the navigation of

the ship and looking after such things as charts and nautical publications.

Q Did you also stand a watch?

A Yes, I did.

Q Now, on the voyage that the vessel stranded where did she load and where was she headed for?

A She loaded in ports in Peru for ports in the U. S. Gulf via the Panama Canal.

Q Did you project any of the routes or projected routes that you were going to follow?

A Yes.

Q On the various charts?

A Yes.

Q I show you this book, which is the deck log and has been admitted in evidence. If you need that to refresh your recollection, will you please use it.

When did you leave Cristobal?

A I left on 26th of January.

Q Do you have the time? When did you leave Cristobal?

A 0156.

Q Were you on watch at that time?

A Yes.

Q Were you or the captain projecting the course you were going to follow?

A Yes, sir, I did.

Q What course did you decide to follow?

A We decided on the course of 357 degree true.

Q And where was that designed to take you?

A Designed to take us to a position southwest of Roncador Bank.

Q What chart were you using when you projected that course?

A I would have projected it on all the charts covering that area.

Q I show you exhibit 4 and I ask you whether this is one of those charts?

A Yes, this is one of them.

Q Which was the one you used first, Mr. Healy?

A The chart I would have used first would have been this one here, Chart number 762.

THE COURT: What exhibit is that?

MR. BAILLIE: That's 3.

THE COURT: Exhibit 3.

Q And did you draw a line on that?

A Yes.

Q Showing the projected course?

A Yes.

Q Which line did you draw?

A Line from here, from the breakwater at Cristobal to this position here southwest of Roncador Light, from that position there.

Q Just put an A alongside the course.

A From position A to position B.

Q And position B is where?

A Position B is southwest of Roncador Light.

Q Was this course discussed with the captain?

A Yes, it was.

Q Did he order you to project the course in that direction, 357 degrees.

THE COURT: I think he said 359.

Q Did you?

A No.

THE COURT: I am sorry. Withdraw that.

Q I show you Exhibit 7, which is identified as the Admiralty Pilot that was aboard the vessel for the West Indies area, and I ask you to refer to -- was that book aboard the vessel?

A Yes, sir.

Q I ask you to refer to page 43. What is the recommended route from Panama, Cristobal, to the Yucatan Passage?

A It says here beginning on line 40:

"Panama Canal to Yucatan Channel. From a position about 34 and one half miles northward of the breakwaters protecting Limon Bay a vessel bound for Yucatan Channel should steer north-north-westward for about 254 miles to a position of about 11 miles westward of Isla de Providencia (Old Providence Island).

"This track passes about 14 miles north-eastward of Courtown cays and is clear of all dangers. Thence a northerly course should be steered for about 161 miles to a position in Latitude 16 degrees 0 minutes north, Longitude 81 degrees 58 minutes west, about 92 miles north-eastward of Cabo Gracias a Dios; this portion of the track crosses the 100-fathom (182.9 meter) line about 73 miles north-northwestward of Isla de Providencia and then leads over a least depth of 11 fathoms (20.1 meters)."

Q May I have Exhibit G, please.

I ask you to examine the information in

the U. S. Sailing Directions, Defendant's Exhibit G, page 108, paragraph 4-2 under navigation. Tell me whether or not that is similar to what you just read?

You don't need to read it out.

A Yes, sir, it is somewhat similar.

THE COURT: What did you say?

THE WITNESS: It is somewhat similar.

Q Almost precisely similar; is it not?

A Without going through it word for word, it seems to be a similar course.

Q Did you and Captain Kerr in discussing the course that you were going to follow northward towards New Orleans take into consideration the advice that was in your Pilot, Admiralty Pilot that was aboard the ship?

A Yes, sir. I read that paragraph and I was aware of it.

Q As a matter of fact, let me show you Exhibit 9. What's this book?

A The Admiralty Publication called Ocean Passages for the World.

Q Is there not a note in your handwriting somewhere in that book?

A Yes.

Q Could you pick it out and tell us the page

number?

A There is a note on page 202.

Q What is the note?

A The note says: "Yucatan Channel, West Indies Pilot volume 1, page 43."

Q Which is the passage you just read.

Why was it that you chose another route or rather Captain Kerr chose another route?

A On our previous voyage through the Caribbean the route as projected here was the route we had taken. We just had to take a similar route.

Q Did you follow that route?

A On this occasion?

Q On this occasion.

A On this occasion mostly so, except changes in course and speed on account of weather.

Q Now, which chart indicates that, this Exhibit 5?

A Yes, sir, it is indicated here.

Q What were the changes, will you explain it, please.

A There were changes first of speed and later a change of course.

Q To what?

A At 0422 there was a change of course to 021B.

Q Why was the change made?

A The change was made because the vessles was rolling very heavily. The change was made to ease the vessel's motion.

Q How was the wind?

A The wind, if I remember, was about north-northeast. At the time it was going up to force six or seven.

Q You were heading into the sea; is that right?

A Yes.

Q And the wind?

A Yes.

Q Were you on watch at the time that that change was made?

A As far as I can remember, I was on the bridge at that time.

Q Out on watch?

A Change.

Q When did you next change the course?

A Next change of course was made shortly after mid day on that day.

Q Prior to leaving Cristobal did you test any of the electronics aids to navigation that you had aboard the ship?

A Our radar was tested as well as the normal gear here which we test such as the steering, wheel, navigation, lights, and such things.

Q Do you know when that radar was installed on the ship?

A Yes, sir.

Q When?

A It was installed the previous summer. That would have been May or June.

Q Of 1971?

A Of 1971.

Q When did you join the ship?

A I joined the ship in June of 1971.

Q You had previously served on that ship, had you not?

A Yes, sir, I had.

Q When you made this change to -- what was the last change you said, mentioned?

A Course 021.

Q Was there another change subsequent to that?

A There was a change after mid day.

Q After mid day. And after mid day had you come on watch again?

A Yes.

Q What was that change?

A That change was a course of 011.

Q And why was that change made?

A That change was made because the weather was started to improve and we were able to alter course more towards the west, in other words, allow the wind and sea to come a little more on the beam.

Q Did you then make a subsequent change?

A Yes, sir, I did.

Q And what was that change?

A That change was at 1558.

Q 1558, and you were still on watch?

A I was still on watch.

Q What was the change to? And did you project a line from that point?

A The change was to a course of 330 degrees. I projected a line from a dead reckoning position at 1600 to the position we had marked B. That's the position southwest of Roncador Light.

Q How far from the light would that position be if you had made the course good?

A 11 miles.

Q 11 miles?

A Yes.

Q How would the light bear ~~on~~ to your ship at that point if you had made that course good?

A The light would have been on the starboard bow.

Q Going back a bit, you came on watch at 12 noon; did you?

A 12 noon, yes, sir.

Q Were you able to get any sort of a fix at that time?

A Yes, sir, I was.

Q Will you describe what you did to get a fix?

A Yes. In the morning, somewhere between 9 and 10 o'clock I had taken a sun position line. At mid day I got a latitude and running up my sun position line for the morning I crossed it with the latitude.

Q Now, at that time how did you feel about that position, was it fairly accurate?

A I felt quite confident of it.

Q And then you made the course change you say at 1558, which is almost four hours later; is that

correct?

A That's correct.

Q Does that leg of your voyage show up on that map, on that chart?

A Yes, sir, it does.

Q Will you label that with a C?

A The leg?

Q Yes.

Now, what did you figure was the speed of the vessel over that leg?

A I allowed 11 to 12 knots.

Q How did you arrive at that figure?

A The speed made good up to 1200 hours had been 11 knots.

Q 1200 hours?

A 1200 hours.

Q Now, we are talking about the next leg, right?

A Yes, sir.

Q And how much did you allow on that leg?

A The same thing, 11 knots.

Q Why?

A Well, the engine speed was still the same.

Q Did you have a ~~Taf-Rail~~ TAFFRAIL log to which you

can refer to?

A Yes.

Q Do you know whether that was referred to?

A Normally it read low.

Q Did you allow for it being low?

A I can't recall whether I did or not. According to the ~~Taf Rail~~ Taffrail Log between 1200 hours and 1600 hours the ship logged 10 knots.

Q You did allow something for it being low?

A A knot more.

Q Are you referring to the projection of the course after you made the turn at 1558? Will you label that with a D.

A (Witness complies.)

Q Just alongside the course line.

A All right.

Q In determining these courses, I appreciate you headed 021, was it, because of the sea conditions?

A That's correct.

Q Wind and so on. But when you projected the 357 course and again when you made the turn on to 330, did you give any consideration to the general set of the current in the area?

A No, sir.

Q We have referred before to Exhibit -- the Armiralty Pilot that you have before you. On page I think it is 23, around 23, you have a small diagramatic chart. What is that of?

A There is a chart on page 21 and also on page 22, gives a general surface current circulation. On page 21 for the month February to April, and on page 22 of the months August to October.

THE COURT: What exhibit is that again?

THE WITNESS: 7.

Q These are indications what of?

A They are indications of the general currents that might be expected in that area.

Q Did you also have aboard the SPRUCE some American Pilot Charts showing the currents?

A Yes, sir, we did.

Q Do you have any recollection as to how many of those you had?

A We had something like 50 or 60, a draw full of them.

Q Why did you have the American Pilot Charts aboard? How did they happen to come there?

A Mostly they came aboard in United States Ports or in the Panama Canal.

Q Will you examine these and tell me whether or not they do not reflect the same general direction of current?

THE COURT: The record should indicate that the witness is looking at Exhibit 50A, B, C, 51, and 50. He is now looking at 50.

THE WITNESS: Yes, sir. It indicates a current similar to what is indicated on the chart here on page 21 on the pilot book.

Q How did you happen -- did you bring these pilot charts from the ship?

A Yes, sir, these came from a ship.

Q As a matter of fact, all these documents, you were requested to get all of these documents together; were you not?

A Yes, I was requested to get them together before leaving the ship.

Q Did anybody determine which pilot charts you would pick out to bring?

A Yes, sir. If I remember rightly, Captain Kerr, Captain Raftery. It was decided we should only bring back pilot charts that we thought relevant.

Q Now, during the watch that you stood from noon to 1600 on the 26th, and before you made the turn

onto 330, did you have in operation any of the electronics aids to navigation the vessel had?

A As far as I can remember, the radar was running.

Q The radar.

Did you give any consideration to the radio direction finder?

A No, sir.

Q Why not?

A I didn't think it would be of any availability, seeing we were so far seaworthy. It didn't occur to me to use the radio direction finder.

Q Were you also confident of the dead reckoning position?

A Yes, sir, I was.

Q And after you left -- you left the bridge I assume at 1600?

A Yes, sir.

Q What did you do thereafter?

A I went below sometime shortly after 1600 and I didn't come on the bridge again as far as I can remember until midnight.

Q When you came on the bridge again at midnight, who was on the bridge?

A The third mate was on the bridge, and the captain was there, too.

Q Was there any discussion with the captain about what course you were following?

A Yes, sir, there was.

Q What was the discussion?

A The discussion was generally what the situation was, I asked whether the light in Roncador had been sighted, what course the vessel was now on.

Q What answer did you get with respect to the sighting of the light?

A That the light had not been sighted and that no echo from Roncador had been received on the radar.

Q And on your prior voyage had you obtained an echo by radar?

A Yes.

Q And had you also sighted the lighthouse?

A Yes.

Q At what distances?

A We sighted a light, if I recall, at 16 miles.

Q You sighted the light at 16 miles?

A Yes.

Q How about the radar?

A If I recall, about 11 miles.

Q Will you examine exhibits 45 and 45A and see whether or not they refresh your recollection as to the distances from which you observed the light of Roncador in the previous voyage

A This copy of the log book page for Monday, 30th of August, 71. I have logged here at a time of 0030 Roncador bearing 014 degrees by 16 miles, and also at 0045 Roncador bearing 023 degree true by 11 miles.

Q Did you make any notation which was which?

A No.

Q You just are saying from memory that 16 was visual and the 11 radar?

A I am quite sure the 11 was radar. The 16 I know was visual. It may have been radar as well. But I can't recall.

Q Do you know what scale you had the radar on when you saw the return at 11 miles, an indication of 11 miles?

A It was either the 24 mile or 12 mile. I can't recall which.

Q When you are looking for a light like that would you ordindarily switch from one to the other?

A Yes, I would.

Q All right, will you give us some idea of the weather conditions when you came on watch at midnight on the 26th, between the 26th and 27th of January?

A The wind was about north-northeast 4 to 5, rough sea, moderate to heavy swell.

THE COURT: When you say 4 to 5, do you mean force or knots?

THE WITNESS: Force.

Q And these conditions continued throughout your watch?

A Yes, sir.

Q Until you of course stranded?

A Yes, sir, they did. The moon was shining most of the time until about 3 o'clock.

Q Were there any rain squalls in the area?

A There were a lot of rain squalls in the area.

Q Did you and the captain have any discussion about not having picked up the light at Roncador?

A Yes, sir, I had expected that we should see the light around 11 o'clock, and with discussion with the captain I had ascertained the light had not

been sighted and that the course had not been altered until just before midnight when I came on watch.

Q What was the purpose of that?

A The purpose of that was that if we were somewhat westward running for an extra hour, that is between 2300 and 2400, would have brought us a little bit ~~either~~ FARTHER eastward. In other words, they counteracted for having set westward.

Q So I gather that you considered the possibility that you might have been set to the westward; is that correct?

A Correct.

Q So I gather that you had considered the possibility that you might have been set to the westward; is that correct?

A Correct.

Q What speed was the vessel going at, proceeding at when you came on watch?

A I reckon about somewhere between 12 and 14 knots.

Q What speed is that?

A The vessel was on full sea speed at that time.

Q Before stranding did you make any alteration

in the speed of the ship?

A Not after we increased to full sea speed.

Q When did you increase to full sea speed?

A At 1612.

Q That was in the afternoon?

A That was in the afternoon, yes, sir.

Q I'm sorry, my question was addressed to the time that you were on the watch from midnight on, was there any alteration in the speed of the ship?

A No, sir, not until shortly before grounding.

THE COURT: You say "shortly." How long before?

THE WITNESS: I think it was a matter of a minute or something, in that region.

Q Were you using the radar?

A Yes, sir, I was.

Q Did there come a time when you picked up an object on the radar?

A Yes, sir, there were a lot of rain squalls showing on the radar most of the time.

Q Did you arrive at a point where you picked up an indication which did not disappear from the scope?

A Yes, sir, I did.

Q I show you Exhibit 56 and I ask you whether or not you prepared that?

A Yes, I did.

Q When did you prepare it?

A I prepared it after the stranding.

Q ~~What~~ Who did you prepare?

A I copied it from a plot I had made on the radar scope itself.

Q You were plotting with a ~~green~~ grease pencil; were you?

A A China graph pencil.

Q They are one of the same thing; are they not?

A As far as I know, sir, ~~We~~ we call them China graph pencils.

Q And you apparently, from that plot, continued to take readings?

A Yes, sir.

Q Did you ever come to a determination of the speed of this object?

A Yes, sir.

Q What was your determination?

A Determination was that the object was stopped or almost so.

Q Did you call this to Captain Kerr's attention?

A Yes, sir, I did.

THE COURT: What time was this when you first sighted it?

THE WITNESS: We first sighted it at 0230 hours.

THE COURT: What time did you ascertain that it was a stationary target?

THE WITNESS: I am not sure.

Q Did you until you found out that it was a stationary object, actually check the speed of it?

A I don't think I actually checked the speed of it, but the more plots I made of it, the more it became apparent that the object was stopped or almost stopped.

Q Did you ever prepare or figure out in diagramatic form the relative speed?

A No, sir.

Q Did Captain Kerr?

A No, sir.

Q What is the indicated speed from your first sighting to the last indication you have?

A It would indicate because looking at a

glance, the lire of approach is roughly parallel to the ship's heading, and also the rate of approach was approximately the same as the ship's speed, and from this without actually calculating what its rate of approach was that the object was stopped or almost stopped.

Q Can you figure out now what the relative speed was the object to your own vessel?

A Yes, sir.

Q What was it?

A It depends on the -- if I remember rightly the rate of approach works out at something like 14 and a half knots.

Q And the speed of your vessel at that time?

A The speed of the vessel as we now know that the object was stopped must have been the same or almost, about 14 and a half knots.

Q Will you refer to Exhibit 51, please, refer to the back of it, will you please.

Doyou see there ~~a nautical~~ AN ARTICLE on ~~the~~ groundings. ~~i~~s there one grounding mentioned on Quita Sueno Bank?

A Yes, sir, there is.

Q And is there a quotation in that article

from the Sailing Directions, American Sailing Directions?

A Yes, sir, there is.

Q What does it read?

A It reads: "Caution should be exercised when passing eastward of Quita Sueno Bank as the current here sets strongly to the westward and on the bank."

Q In view of the speed that you determined, this ~~relevant~~ speed between the object you saw ~~and~~ the radar, the speed ~~of your vessel~~ that you knew your vessel was proceeding at, did the vessel in fact experience any such set?

MR. JACOBSEN: Object to the question.

THE COURT: Read the question back, please.

(Question read.)

THE WITNESS: It appears to me she experienced very little set westward.

MR. JACOBSEN: Objection, your Honor This witness has already testified that they had an exceptional set to the west.

MR. BAILLIE: He has not.

THE COURT: I found the previous question a little bit ambiguous. Try rephrasing it. I am not certain what you were getting at, and the witness may

not have either.

Q Within the last hour before the stranding, when you had this object on radar and since your ship was proceeding at full sea speed, which you have already told us was somewhere around 14 and a half knots, can you say whether or not a set of that nature as described in the sailing directions was actually experienced by the vessel on the day of the stranding?

A It would appear to me that in the last hour that such a set was not experienced.

Q Were you aware of this article, as you read this article prior to the stranding?

A Yes, sir, I had.

THE COURT: You are speaking of Exhibit 51?

MR. BAILLIE: Yes.

THE COURT: When did you read it?

THE WITNESS: I would have read it I would expect sometime during December of 1971.

THE COURT: Approximately a month before the stranding?

THE WITNESS: That's correct, your Honor.

Q I show you exhibit 52 and ask you what that is?

(Handing.)

A This is a journal I kept just purely for my own interest.

Q Is there a reference to this article in that journal?

A Yes, sir, there is.

Q Would you find it for us, please.

Are the pages numbered?

A No, sir, they are not numbered.

THE COURT: Why don't we dog-ear that page unless you are going to make reference to a few pages.

Q It is apparent, is it not, Mr. Healy, that the ink in which that notation is made is somewhat different from the other ink?

A Yes, sir, it is.

Q Can you tell me when that entry was made?

A The entry would have been made I suspect around December of 1971.

Q Why was it inserted in an area of the book that covers prior voyages?

A I put it in here because I thought it was an appropriate place to put it in.

After all, I have notes concerned courses and distances from Galveston, Texas to Panama Canal, and I have other courses that cover areas of the

Caribbean.

Q I show you Exhibit 57 and ask you what that is, Mr. Healy?

A That's a sketch I made while on the vessel, while stranded on the reef. It is just a sketch showing the line of the reef, the position of the vessel and contour sounding lines out from the vessel.

Q What does it show, what information does it give us?

A It shows the position of the ground ~~taken~~ TRACK used by the salvage people. It shows the soundings in the immediate vicinity of where the vessel grounded.

Q What was the first indication you had of going aground?

A First indication was the captain noticed a sounding on the echo sounding machine.

Q Was the fathometer in operation at that time?

A Yes, sir, it was.

THE COURT: Do you call a fathometer an echo sounder?

THE WITNESS: Yes, we do, your Honor.

Q Mr. Healy, these are exhibits 43, 43A and 43B. Does this generally show the conditions on the

reef?

A It shows the conditions at the time these photographs were taken.

Q What's the difference between the photographed condition and the condition at the time of the grounding?

A It was obviously taken on a very nice day.

Q In other words, different?

A We experienced different weather conditions for the length of time that the vessel was on the reef.

Q Is the heading different, heading of the ship?

A It appears to me the heading of the ship is the heading of the vessel took up for say three or four days after stranding and she remained that way for the remainder of the time.

Q How long after your last indication by radar of the object did you actually strand, or the vessel actually strand? The time you have for the last indication, your plotting of it, indication of the plotting of the object?

A The last time I have here is 0329.

Q How long after that did the vessel go

aground?

A Vessel went aground after, a minute after that.

Q What efforts, if any, were made to get the vessel off?

A Immediately, none. Not until such time as the salvage tugs arrived.

Q Would you examine this Exhibit 41 and tell me what that is?

(Handing)

A Yes, sir, this is the recording papers taken from the echo sounder.

Q Does that indicate the fact that the water was getting shallower?

A Yes, sir.

Q Where does it indicate?

A It indicates in this position here the vessel passed over a shoal patch and then returned to deeper water, and here is where she is, the water again became shoal at such time as the vessel grounded.

Q How long a period did that cover, period of time?

A From looking at this graph I can't tell.

THE COURT: Can you give any estimation

of what would be your best estimation?

THE WITNESS: No, not from this as it is. If it was still in the echo sounding machine, then I would have known, but not from the graph itself.

Q Do you have any recollection yourself of the difference in time?

A It would be only a matter of minutes.

THE COURT: Which exhibit is this?

MR. BAILLIE: 41, your Honor.

THE COURT: We are missing something here. All right. Put them together.

Q One more exhibit, Mr. Healy, Exhibit 56; what is this?

(Handing)

A That's a copy I made of the chart of the area. I think it is chart 1218. It is not a copy of the whole chart. It is only a copy of the portion of the chart.

Q Why did you make that information?

A Well, Captain Raftery asked me to do so because he wanted to send out some documentation to the company to give them information concerning the stranding.

Q Is it also an enlargement of the chart?

A It is twice the scale of the chart.

Q I ~~have to~~ show you Exhibit 6 and ask you whether or not that is the chart from which you made that enlargement?

(Handing).

A Yes, sir, this is the chart.

And the chart, Exhibit 6, is the one you had aboard the ship, the one you were navigating from?

A Yes, sir, this is the chart we had aboard the ship.

THE COURT: There are some marks on this exhibit 58 over on the bank, A and B. Do they refer to the position ~~as~~ stranding?

THE WITNESS: Yes, your Honor, they do.

Q Why the two of them?

A The position that's marked A is a bearing ~~in~~ and distance of the other wreck that's on Quita Sueno. The position marked B is the position which we determined from taking the sights after grounding.

MR. BAILLIE: May we have about five minutes, your Honor?

THE COURT: We will take a brief recess.

(Recess.)

MR. BAILLIE: You may cross-examine him.

CROSS-EXAMINATION

BY MR. JACOBSEN:

Q Mr. Healy, I show you Exhibit P, which appears to be an order form. Did you prepare that document?

(Handing).

A Yes, sir, I did.

Q What is that document?

A It is an order form requisitioning charts ~~of~~ and nautical publications.

Q Is there a ~~p~~P ilot on order there?

A Yes, there is. There is, I see three of them here.

Q When was this order form dated?

A It is dated the 3rd of the 1st, 1972.

Q Is that January?

A That's January.

Q January 3?

A January 3.

Q 1972?

A '72.

Q Did you mail that to the office in Dublin?

A Yes, sir, I did.

Q I show you Exhibit D; is that one of the

pilots you had on order?

(Handing)

A Yes, sir, it is.

Q And that is the 1970 pilot for the East Coast of Central America and Gulf of Mexico?

A That's correct.

THE COURT: Which system?

MR. JACOBSEN: British System.

Q On the IRISH SPRUCE you used the British system of nautical publications; did you not?

A Yes.

Q You kept a complete set of the British?

A Yes, that's correct.

Q Referring to page 1 on the 1970 pilot, the one you had on order, exhibit D, would you read to us the general directions for Panama Canal to Yucatan Channel?

A It says beginning on line 20: "From a position about three miles northward of the breakwaters at the entrance to Limon Bay, a vessel bound for Yucatan Channel should make good a course of 352 degrees to pass 15 miles westward of Banco Serrana Light (14 degrees 16 minutes north, 80 degrees 24 minutes west,) thence alter to 354 degrees for position

latitude 15 degrees 42 minutes north, longitude 80 degrees 50 minutes west, from which position she should make good a course of 320 degrees, passing westward of Thunder Knoll and keeping in depths of more than 100 fathoms."

Q So that in 1970 the pilot-recommended route is to go west of Serrana Bank and east of Quita Sueno Bank; is that right?

A That's right.

Q Is that the projected track that you did have on the IRISH SPRUCE on the last voyage?

A Something similar.

Q It is the same, isn't it, that you projected the track west of Serrana and east of Quita Sueno?

A In that respect it is the same.

9 Q You made one prior trip through there, by more or less the same route I think you testified?

A That's correct.

Q Did you see other ocean going vessels westward on that track on that route on the previous voyages?

A I can't recall for sure, but I think so.

Q It is true, isn't it, that the other Irish Shipping Ltd. ships do go through that area between

Serrana Bank and Quita Sueno Bank?

A To my knowledge it is.

Q On your noon position on the 26th you say you were confident of that position?

A I am, sir.

Q You had a morning sun line and a local apparent noon sun?

A That's correct.

Q Did you have a good horizon?

A Horizon was good.

Q And you had gone to nautical school, navigational school?

A Yes.

Q And you had how much experience navigating with a sextant timewise prior to the last January, 1972?

A Since I first got my second mate's ticket and that was in January of 1969.

Q And then after the noon position you were on 330 up until midnight?

A No, sir, that's not correct.

Q Tell me again what you were on?

A At mid day we were on a course of 021.

Q Yes.

A And sometime after mid day altered to a course of 011 until 1558.

Q I see, 1558. Then you went to 330?

A That's correct.

Q Up until midnight?

A From then until midnight.

Q Referring to the current diagrams in the 1956 pilot, which is Exhibit 7, would you say that in the vicinity of Roncador and Quita Sueno that the current diagrams there are more or less north?

A More or less northwesterly, yes.

Q So that would be more or less in the same direction as your course after 358, 1558?

A Yes, sir, more or less.

Q I believe you have done this before. How did your speed made good check out from your noon position up until the time of stranding?

A I think it came to something like 14 and a half knots.

Q And it was very close to your DR, was it not?

A If I remember rightly, sir, it was.

Q Do you recall your itinerary in general, when you were, say, in New Orleans on the previous

voyage?

A I am not sure. It was probably something like August of '71, but I am not sure.

Q One of the radar invoices indicates you were in Galveston on September 7, 1971. Does that sound right now?

A It does.

Q Then you went back through the Panama Canal?

A That's correct.

Q When did you go through there?

A From then we went to Peruvian Ports.

Q And then north again to San Francisco?

A Yes, Long Beach, San Francisco.

Q Looking at some of the evidence I notice you were in San Francisco on December 9, 1971; is that correct? Where did you go from there?

A I can't recall. I do know that.

Q Back to Peru?

A No, we went farther north. We went to Puget Sound, Tacoma.

MR. BAILLIE: Did you say that the vessel was in San Francisco on the 9th?

MR. JACOBSEN: That's what I have.

Q Would you check the log, please. How far

back does it go? Can you confirm the New Orleans and Galveston dates?

A It goes back as far as the 31st of October.

Q Starting where were you the 31st of October, at sea?

A At sea, from Mataraoni. They are both ports in Peru.

Q Did you go to Callao?

THE COURT: I am a bit puzzled as to the relevancy of all that.

MR. JACOBSEN: I'd like to establish the itinerary to show where she could receive up to date nautical publications.

MR. BAILLIE: Captain Raftery is going to testify as to that.

THE WITNESS: According to the log book, after Salaverry the next port was Guayaquil, Ecuador. Then the port of Manta, also in Ecuador.

Q Did she go to Quayaquil?

A According to the log book, no.

Q Not that voyage?

A Not that voyage.

Q Then you --

A Unless she had been in Quayaquil before --

Q October, I see.

A Right.

Next was Long Beach.

Q When was that?

A Arriving in Long Beach on the 8th of November.

Next port was San Francisco.

Q When was that?

A It was on the 15th of November.

Q Maybe she stopped at San Francisco southbound again?

MR. BAILLIE: November 6 she was enroute from Manta, Ecuador to Long Beach, California.

On the 8th she arrived at Long Beach, mid day.

The 13th she sailed for San Francisco just before midnight.

The 15th she arrived at San Francisco during the A.M.

The 19th she sailed for Tacoma late in the afternoon.

The 22nd arrived at Tacoma. In there I think there is a very short time, midnight, 2 a. m.

On the 28th she sailed for Powell River, which is in British Columbia; late afternoon, 29th,

arrived Powell River.

29th sailed again for Coos Bay. First arrived at Coos Bay, Oregon. She sailed from San Francisco on the 6th of December. She arrived in San Francisco on the 7th of December.

On the 14th she sailed for Saleverry from San Francisco.

THE COURT: To where?

MR. BAILLIE: Saleverry.

She arrived there on the 24th.

She arrived on the 27th at Callao. She sailed from there on the 4th. She arrived on the 6th of January at Ilo. And on the 8th she was at Mataraoni, and the 10th she left Mataraoni and went back to Saleverry.

On the 11th arrived there. 18th again, Callao, Peru, and sailed from there on the 20th of January on her ill-fated voyage.

MR. JACOBSEN: And she passed the Canal on February 26.

MR. BAILLIE: 26th.

BY MR. JACOBSEN:

Q When you passed Roncador on that previous voyage did you have good visibility as you passed it?

A If I recall, we did.

THE COURT: I don't think you got on the record the fact that that itinerary is being stipulated into the record. That is so, is it not, sir, you are stipulating that that was the accurate itinerary of the vessel?

MR. JACOBSEN: That's right.

Q Referring to Exhibit 56, Mr. Healy, which is your plot, did you consider that at that time that that might have been a stationary fishing vessel?

A The thought had occurred to me, sir.

Q You had no idea at the time that you were as far west as you were; is that right?

A No, sir.

Q And it is correct, isn't it, that you said that you were set exceptionally to the west?

A That's correct.

Q And as much as 30 miles?

A Something in that region.

Q Did you agree with the captain's testimony that it was an abnormal current that set you to the west?

A I agree. It was a strong set to the westward.

Q You recall the testimony in Dublin in April, 1972?

A Yes.

Q Your testimony was fresher than it was now, wasn't it?

A Yes, sir, it was.

Q I don't remember if you were there, but do you remember Captain Kerr testifying:

"Q The matter at the end of the right-hand side of this piece of paper indicates echos received for about 80 seconds prior to the stranding; is that correct?

"A That is correct."

This is referring to your sounding graph. Would you agree with Captain Kerr's testimony?

A I wasn't present when he gave that testimony, but I would agree with it.

Q Mr. Healy, in the British System current is set forth in the pilot; is it not?

A In the pilot book, yes, sir, it is.

Q And the pilot is the same as what we call our sailing directions in the U. S. system?

A It is.

Q In the British they don't have a pilot

chart as such as we do in the U. S.?

A Not as such.

Q But current is also set forth in the navigation charts; is it not, in various places? For example, I refer you to Exhibit 6, which is chart 1218, and to the area just north of the light at Quita Sueno Bank.

Doesn't it show an arrow going northwest as a current sign there?

A I see one here that's north. There are others in various places.

Q Over along the coast aren't there mostly northerly direction?

A Mostly northerly direction, yes, sir.

Q Are you aware that the light structure at Roncador Bank and at Serrana Bank are what are described in the British system as a pyramidal framework tower?

A Yes, sir.

Q Which means they are not solid; isn't that right?

A That's correct.

Q And that type of target isn't as good a radar reflection as a solid tower; is that right?

A Normally that is correct.

Q Are the lights generally weak, are they generally weak in the Caribbean in that area, the aids to navigation?

A They are generally weak.

THE COURT: Who maintains those aid to navigation in that area; do you know?

THE WITNESS: I am not sure, your Honor. I have an idea. Maybe the Panama Canal Company. But I am not sure.

Q When you went on watch at midnight on the 26th who was there during that watch other than yourself; Captain Kerr?

A Captain Kerr was there. There was also a lookout man.

Q And the ship was on automatic pilot?

A Yes.

Q There was no additional unlicensed man other than the lookout?

A That's correct.

Q And the lookout was on the bridge?

A He was on the starboard wing of the bridge.

Q He wasn't on the bow?

A He was not on the bow.

Q Was this the usual practice on the IRISH SPRUCE?

A In clear weathe. it was.

Q Was it usual practice then of the IRISH SPRUCE to be on the automatic pilot at night?

A It was.

Q With the unlicensed man standing watch on clear weather on the wing?

A Yes, sir.

MR. JACOBSEN: Maybe you can help me. Which exhibit is Mr. Healy's journal?

MR. O'REGAN: 52.

Q Did you stop keeping your journal on a certain date?

A Yes, I did.

Q When was that?

A 24th of December, 1971.

Q And you never made any further entries in it?

A That's correct, sir.

Q Is this a personal journal of yours?

A It is a personal journal of my own,

Q Did you use it in your room from time to time, keep it in your room?

A I may have from time to time, yes.

Q Did anybody else use the journal other than yourself?

A Very often it was on the bridge. Anybody was free to look through it.

Q As far as you know, did the captain ever use your journal?

A As far as I know, he has looked through it. I don't know if he ever used it.

Q It's true, isn't it, that you can use a running fix with a radiobeacon bearing just like you can with any other kind of a bearing?

A It is true.

Q You can run it up with speed and course?

A You can, sir.

Q It's also possible, isn't it, with a running fix to refine it as you go along, in other words, run up your series of bearings that have been crossed and then run the next one with speed and distance from the old running fix rather than from the old DR? That way you refine it from running fix to running fix?

A I don't understand what you mean by "refining." What you are saying you is mean you can take a series

of running fixes.

Q Yes, sir.

A Yes, sir, you can.

Q What I am saying is in using the new running fixes, in making a new running fix that you run up your course and speed from the old running fix rather than from the old DR?

A No, sir, I would not do that.

Q It is possible to do it as I suggested?

A It is possible to do it.

Q A running fix would indicate whether a ship is being set, would it not?

A It would, sir.

Q On the mid watch on either January 26 or 27, 1972, you didn't attempt to tune in the station at Isla San Andres; did you?

A No.

Q In fact, you didn't even know there was a radiobeacon there; did you?

A That's correct.

Q You didn't know?

A I didn't know.

Q If Isla San Andres had been listed in the list of radio signals that you had on board in the

geographic index, or either the alphabetical index of signals or station, do you think you would have attempted to use it?

A I don't think so.

Q Why not?

A Because I had in mind trying Swan Island.

When turning on the radio direction finder, the static was so bad at the time that I didn't even try that.

Q But you really can't tell about static until you actually tune in on the frequency of the given station?

A If you get static, you will get it all the way, no matter what frequency.

Q Going back to the radio beacon at Isla San Andres, you say you didn't know there was a radio beacon there. But if you had known there was a radio beacon there and if you had known it had power of a thousand watts, and that it had continuous transmission, don't you think it is possible you would have used it then?

A It is possible, but I don't honestly know.

Q In the Caribbean in that area what means of navigation do you really have? You have got

celestial when you can use stars and sun; right?

A That's correct.

Q You have got what else?

A There are a number of DF beacons. There is also Loran in that area.

Q You didn't have Loran on this ship, though?

A We did not.

Q You had Decca, but there is no station for Decca in the Caribbean?

A That's correct.

Q You got a fathometer, but the water is deep right up to the banks; is it not?

A On the east side of Quita Sueno, yes, that's correct.

Q Isn't it also so at Roncador and in Serrana Bank?

A Yes, sir, it is.

Q And radar has somewhat limited use unless you get close to the pyramidal framework towers on Roncador and Serrana?

A That's correct.

Q It is true, isn't it, that you should use all the navigational aids that you can?

A It is.

Q Is that what you normally do?

A Normally, yes.

Q If you thought Isla San Andres would have been of help to you, you would have used it, I take it?

A I wasn't aware that a beacon existed there.

Q But if you had been aware and thought it was good, you would have used it, would you?

A If I thought it was good, then I assume I would have used it.

Q You mentioned that you navigated and you stood the 12 to 4 watch?

A That's correct, sir.

Q And was it Mr. Kelly that stood the 4 to 8 watch?

A That's correct.

Q Did he navigate on his watch?

A He did.

Q And a Mr. O'Connor stood the 8 to 12 watch?

A Yes.

Q And he navigated on his watch?

A On his watch.

Q I believe you testified that about using the British Pilot you consider good practice to look at the pilot book before going on watch.

A Before going on watch?

Q Before going on watch.

A I don't make a practice normally of reading a pilot before going on every watch.

Q What I mean is reading a pilot before going through an area.

A Yes, yes.

Q Was that the practice on the IRISH SPRUCE?

A Yes, sir, it was.

Q As far as you know, was that the practice for Captain Kerr?

A As far as I am aware, it is.

Q You have read the 1970 pilot now, have you not?

A I have.

Q And noted that it has a caution about a strong current in the vicinity of, western current in the vicinity of Quita Sueno?

A Yes.

Q If you had known of the caution that the British Pilot on January 26 and 27th would you have done anything differently than you did?

MR. BAILLIE: Object to the question on the ground that Mr. Healy has already testified that he

had, was quite aware of that caution.

MR. JACOBSEN: I don't believe so.

THE COURT: He said he was aware of a caution on the back of one of the American charts. However, I will allow the question as it pertains to the British Pilot which he had not read as of the time.

MR. JACOBSEN: That's correct, your Honor, and he stated that he had read it in December. He didn't say he was aware of it in January 26 and 27.

THE COURT: Objection overruled. Read the question back to the witness.

(Question read.)

A No.

Q You say no?

A I say no.

Q That you wouldn't have paid any attention to the caution about the current in the vicinity of Quita Sueno Bay?

A The caution referred to the area in the vicinity of the bank. As far as I was aware, to what I thought, we were no where near that bank.

Q If you thought there was a strong westward current in that area, wouldn't you have allowed more leeway in that area?

A If I thought I was close to Quita Sueno Bank I would have known that the ship was not where I thought the ship was.

Q Well, if you had been aware of the caution in the 1970 British Pilot, wouldn't you have set your course farther east?

A But the course line was not near Quita Sueno.

Q Isn't it true that with the warning in the British Pilot you would have shaped your course to go farther away from Quita Sueno than you did?

A No, sir. Wehat I am saying is this: The caution refers to the area in the vicinity of Quita Sueno. From what I thought we were 25 to 30 miles away from Quita Sueno.

Q You were surprised at the amount of this set?

A Yes.

Q Now, let me read you what Captain Kerr stated, and I will ask you if you agree with it.

MR. BAILLIE: Object to it as cross-examination on the basis of somebody else's testimony.

MR. JACOBSEN: I will ask him if he agrees with it.

THE COURT: Overruled.

Q "Q Were you surprised by the amount"--
that's page 40 of Captain Kerr's testimony.

"Were you surprised by the amount of set and drift encountered?

"A I was.

"Q If you had known about the magnitude as set and drift involved, what would you have done?

"A If I had known the strength of the current?

"Q Yes.

"A I would have allowed for it if I thought it was that much.

"Q Would you have gone closer to Serrana Bank like you did the time before?

"A I would have allowed a certain number of degrees to counteract the current, which meant we would not have steered straight but gone that way if you know what I mean.

"Q More easterly?

"A We would have steered a more easterly course to follow the line laid off."

Does that give more sense to the question I was asking you? Do you agree with what Captain Kerr said?

A I agree with what he said. But as I read the caution, the caution refers to the area in the vicinity of Quita Sueno as opposed to a caution referring to an area covering both Serrana, Roncador and Quita Sueno.

Q The caution refers to a vessel passing eastward to Quita Sueno Bank, don't you think?

A Yes, sir.

Q And that's what your projected tract was, was eastward of Quita Sueno Bank?

A Yes, it was a long way to the eastward.

Q Mr. Healy, referring to your exhibit 51, which is a U. S. Pilot Chart, you say the pilot chart came aboard when you were at a U. S. port?

A Yes.

Q If they are around you get them and if they are not around you don't?

A Normally they are brought aboard by representatives of the American Weather Service, who come aboard to check our barometer.

Q Did you correct your 1956 pilot which was on board, which I believe is exhibit 7, did you ever correct that with the U. S. Pilot Chart?

A No, sir.

Q It wasn't your normal practice to correct your British Pilots with U. S. Pilot Charts?

A No, sir, not my normal practice.

Q And it was the practice then on the IRISH SPRUCE for the master to use the British Pilots you referred to?

A It was the practice.

Q As far as you know, the master never read the back of that November, 1971 pilot chart; did he?

A I don't know if he did read it or not.

Q The information you referred to was, the caution was on the back of the November, 1971 U. S. Pilot Chart; is that correct?

A That's right.

Q What is the practice with pilot charts, don't you use the pilot charts for the month that you are involved in when you are sailing through an area? In other words, wouldn't you use January in January and February in February, November in November?

A Yes, sir, you would.

However, you would also use supposing that you did not have -- I will take the month of June just for an example. Suppose one did not have the chart for the month of June in the year that one was currently

in, one would use a chart for the month of June in a previous year.

Q They are more or less the same from year to year for the same month; is that what you mean?

A Yes.

Q Do you have the pilot chart there, exhibit 51?

The pilot chart basically covers current wind, does it not?

A Yes, it does.

Q And on the back of them there ~~is~~ are items of general information?

A General information of general interest.

Q Like the Omega Navigation System and what have you?

A That's correct.

Q And also isn't it true that the pilot chart specifically states on it at the top that that chart should not be used for navigational purposes?

A That's correct, sir.

Q Isn't that right on the top?

A Yes, that's right here on the top.

Q Is that on all of them, to your knowledge?

A To my knowledge, it is.

THE COURT: The record should show the witness was referring to Exhibit 51.

MR. JACOBSEN: Thank you, your Honor.

Q I asked you about when you were by Roncador on the previous voyage about the visibility which I believe you said were -- there weren't any rain squalls or storms there at the time; were there?

A On the previous voyage?

Q Yes. Here is your log. Referring to exhibit 45, 45A.

(Handing).

A I don't remember myself. The only thing I can say is that of a note for 0400 that morning. Mainly overcast and clear rain at a distance.

MR. JACOBSEN: No further questions.

REDIRECT EXAMINATION

BY MR. BAILLIE:

Q Did it occur to you on your 12 noon to 1600 watch to look in the various publications you had aboard the ship for information about an aero beacon on San Andres Island?

A No, sir, it did not.

Q Did it occur to you to look for whatever information you had aboard the ship for an aero beacon

on San Andres Island after midnight of that same day?

A No, sir, I did not.

Q Did you in fact look for it?

A I don't remember looking for it, no.

Q Have you since ascertained that the list that was aboard the ship, Exhibit 10, does have a reference to the San Andres aero beacon on the chart in the back?

A Yes, sir, I know, that is correct.

THE COURT: That's Exhibit 10.

Q Is it not a fact, Mr. Healy, that the new edition of the beacon list -- I think you referred to it as light list before, it should be the radio-beacon list -- is in two volumes, one a set of charts and the other a listing of the various beacons?

A That's correct.

Q And what is the set of charts designed for; do you know?

A I assume a set of charts is designed purely for easy reference.

Q To look up?

A Various beacons in the area in which we are in.

Q You were asked about the reference to the

on shore set by Quita Sueno Bank. Have you examined the 1970 edition with respect to the information with respect to Quita Sueno Bank current. Would you tell me whether or not that is similar to the quotation from the American Sailing Directions that is on Exhibit 51?

A Line 30 says: "Current caution. Caution should be exercised when passing eastward of Quita Sueno Bank as the current here sets strongly to the westward and on the bank."

Q Is that not in essence what is on the chart?

A I think it is perhaps the same word for word.

13 Q Have you any way of telling us how far to the west you were set from your projected line -- projected course, I mean? Is it possible to figure?

A Yes.

Q This does require some points of reference on the projected line, though, does it not?

MR. JACOBSEN: What's the question? Can I have that question read back?

THE COURT: Read the question back.

(Question read.)

THE WITNESS: Yes, sir, it does.

Q Can you figure that or not? If you can't we won't do it.

A If you mean how far westward --

Q You think you were set.

A -- is the position of grounding --

Q That's right.

A -- from the course line, then it is simply the distance measured in a westerly direction from the course line to the position of grounding.

Q What is that distance?

MR. JACOBSEN: You may be using the wrong course line.

A You mean the difference here between the solid line or the dotted line?

MR. JACOBSEN: Yes.

THE WITNESS: The dotted line is the line the ship would have been on had the ship followed exactly the course as laid up on the chart.

MR. JACOBSEN: Up to midnight?

THE WITNESS: Up to midnight, and --

MR. JACOBSEN: Didn't you testify that you stayed on 330 up until midnight?

THE WITNESS: That's correct. Then taken

from the dotted line there is approximately something like 28 miles to the westward.

THE COURT: Gentlemen, can we stipulate that while the reporter was replacing his paper we have agreed to have the witness advance his DR to the time of stranding, that being 329 so as to then give us a measurement in distance as to the amount of set apparently experienced in contrast to the DR.

MR. JACOBSEN: Agreed.

MR. BAILLIE: Yes.

THE COURT: Can you now answer that question?

THE WITNESS: I would say approximately 21 miles.

THE COURT: In what direction?

THE WITNESS: It would be approximately west-southwest.

MR. JACOBSEN: what exhibit are you working with?

THE COURT: Exhibit 58 which is an enlargement of one of the other charts, I believe Exhibit 6.

I think the record should also reflect that all of the drawings on Exhibit 58 were made by you after the stranding and indeed Exhibit 58 itself was

not created until after the stranding; is that correct?

THE WITNESS: That's correct, your Honor.

BY MR. BAILLIE:

Q Do you have any idea, Mr. Healy, when it was that the vessel was set over after your fix that you had confidence in around 12 noon?

A No, sir, I do not.

MR. BAILLIE: Nothing else.

RECROSS-EXAMINATION

BY MR. JACOBSEN:

Q Mr. Healy, referring to Exhibit 6, the chart in use at the time of this stranding, did you testify that the set there was about 28 miles westerly?

A At first I said 28 miles. That was taken at approximately a straight westerly direction.

Q And then what did you just do on Exhibit 58 when you got 21 miles?

A On Exhibit --

Q You took from the DR --

A I projected the DR position up to 0330 and compared the distance between that DR position and the position of stranding.

Q Would you do the same thing on Exhibit 6.

A Looks approximately the same, maybe 21 and

a half miles.

Q Referring to Exhibit 10, the 1969 radio list, it is true, isn't it, that Isla San Andres is not listed in there in any of the indexes, neither in the alphabetical index of stations or of signals or of the geographical index or in the service details?

A That's correct.

Q And on the pull-out diagram at the back, which is Exhibit 10A, that the power is not given?

A Yes, sir, that's correct.

Q So that you don't know how strong it is?

A That's correct.

Q Then it doesn't show schedule, that is when it broadcasts, when it transmits?

A That's correct.

Q You can't tell whether it is continuous or on and off for certain periods of day or whether it is on at night, can you?

A You can't tell from this little chart here.

THE COURT: Can you tell from any of your own British charts, do they show the locations of radiobeacons?

THE WITNESS: Not a radiobeacon.

THE COURT: But other types of radiobeacons?

THE WITNESS: Marine ones they do.

Q Along that line, Exhibit 6, the chart in use did not show the radiobeacon at Isla San Andres; is that true?

A That's correct.

THE COURT: Do you know if the American Charts show aero radiobeacons?

THE WITNESS: To my knowledge, they do.

Q That's shown on Exhibit M, which is now 26000.

Mr. Healy, referring to Exhibit M, an American Chart, can you tell us whether there are aero radiobeacons at Isla San Andres shown there?

A Yes, sir, it is shown here.

MR. JACOBSEN: No further questions.

REDIRECT EXAMINATION

BY MR. BAILLIE:

Q Since you gave noconsideration at all to using the radiobeacon, aero radiobeacon, at San Andres Island, to get a fix, you didn't have any discussion with Captain Kerr about it?

A No.

Q About radio installations existing on that island?

A No, sir, I did not.

MR. BAILLIE: No further questions.

THE COURT: I have a few questions of the witness.

BY THE COURT:

Q You spoke earlier about the fact that in the few hours before the stranding your radar was picking up some squalls?

A Yes.

Q Could you on your rada distinguish a squall from a more solid target?

A Intense squall, no, not always.

Q On the evening in question were you certain that the target you were getting was squalls?

A Not fully certain, no.

Q When you picked up the target which ultimately turned out to be a wreck on Quita Sueno Reef, were you certain that that was a target and not a squall?

A No, I wasn't certain that it was either a target or a squall.

Q Did you ever become certain any time prior to the stranding?

A No, I don't think so, except that it didn't appear to be a squall seeing that it had

lasted for such a period of time.

Q The fact that it was stationary also suggested that it was not a squall; did it not?

A Yes, sir, it did.

Q You say you considered the possibility that it was a fishing vessel?

A I did consider that possibility, yes.

Q And what was your visibility at that time?

A If I remember, the visibility was good.

Q And how far away was the target when it was first picked up on radar?

A I think it was 16 miles.

Q How far away was it on your last radar reading?

A When we grounded, it was just over four miles away.

Q Did you or the captain or anyone else on the bridge ask the lookout to see if he could detect the lights of the vessel in the direction of the radar target?

A I think I asked him myself to keep an eye out for it.

Q What did he tell you?

A He told me he couldn't see any light.

Q When you got up within a few miles of it, did the fact that the lookout still could see no lights mean anything significant to you?

A I thought maybe it was a fishing vessel with very poor lights or no lights at all.

Q Is it common in those waters and at that distance from land to encounter fishing vessels without lights?

A Yes, sir, I believe it is.

Q You testified about the fact that the fathometer indicated that you passed over some shoals shortly before you stranded. Who, if anybody, was reading and observing the fathometer readings at that time?

A It was the captain who first saw it.

Q Was your fathometer equipped with any sound device to alert you to the fact that it was getting readings?

A No, sir, your Honor, it was not.

Q So you had to actually be looking at the fathometer reading at the time to see if you were sounding bottom?

A That's correct.

Q Now, I believe you testified that you could

not yourself tell how long a period of time was involved in the readings which appear only on the left-hand extreme of the exhibit, but the captain testified that he thought they occupied a period of about 80 seconds, and you agreed that that seemed about right?

A I agreed, your Honor.

Q Starting from the right-hand side, the first reading, do you know how far along it was before the captain first became aware that the fathometer was getting a sounding?

A Well, I don't quite understand.

The captain glanced at the fathometer and saw right away that the vessel had been in shoal water.

Q I understand that,

But did he become aware of this as you were first streaking the shoals or after you passed over that first shoal?

A If I remember rightly, after we passed over it.

Q That would be then about a minute after you first were getting fathometer readings before he became aware of the fact that you had gotten soundings that it had passed over a shoal?

A Yes.

Q And within roughly a half a minute of the time you ran aground he became aware of the fact that you were getting fathometer readings?

A That's correct.

Q Proceeding, as you were, at full sea speed, how long would it have taken had you reversed your engines on the vessel and bring it to a halt?

A I can't remember the figures offhandedly. There was a card on the bridge giving those details.

Q What's your best recollection?

A I think something between 4 and 5 minutes.

Q Have you ever seen a fathometer that comes equipped with a sounding device that rings as soon as you are getting a sounding?

A No, I have never come across it.

Q On the bridge at the time you were there whose responsibility was it to follow the fathometer, yours or the captains?

A Neither of us watched the fathometer continuously, but I know myself and, as far as I know, the captain also looked at it from time to time.

Q I believe you testified that you took the noon to 4 o'clock watch.

A That's correct.

Q Were you responsible for being on the bridge during the mid watch to take the star sights?

A No, your Honor.

Q Who took the star sights?

A The first mate, Mr. Kelly, took star sights.

Q Is it customary in Irish and British vessels for someone other than the navigator to take the start sights?

A It is.

Q At any time prior to the stranding did you or to your knowledge anyone else on the bridge hear any surf?

A To my knowledge, nobody heard any surf.

Q After you stranded were you able to hear a surf?

A I can't recall immediately after stranding whether we could hear the surf or not.

Q At any time when you were on the reef were you able to hear surf?

A Yes, I think so.

Q Was it very loud?

A No, not very loud.

Q You testified earlier about your ability

to make a running fix from a radiobeacon. Am I correct in understanding that the accuracy of a running fix depends upon the accuracy of your assumed speed?

A Yes, sir, your Honor, it does.

Q Have you ever had occasion to make running fixes based solely on radiobeacons?

A I don't ever recollect actually doing running fixes solely on a radiobeacon.

Q How accurate a reading would you say you get on a radiobeacon at a distance of say 50 miles?

A I couldn't put a figure on it. I would treat it with a certain amount of suspect.

Q Accurate within maybe two or three degrees?

A Maybe, if conditions were good.

Q You spoke earlier about the fact that you attempted to pick up the radio beacon on Swan Island and you got static and you therefore believed that if you had attempted to get the radiobeacon which you believed was on San Andres that you would have had the same sort of static; is that right?

A That's correct.

Q Have you ever had occasion to use a radio-beacon to have thunderstorms only in one direction

and to get static when attempting to pick up stations in that direction but to be able to attempt to use radiobeacons in an opposite direction in which there was no thunderstorm to pick them up more clearly?

A No. My experience has been that once static is in the area it affects the whole area. In other words, it makes no difference from which direction the signals are coming. If it's bad on one particular beacon, it will be bad on them all.

Q This enlarged chart that you have here, it shows an aid to navigation at the northern tip of Quita Sueno Bank; does it not?

A That is correct, your Honor.

Q And is that a light?

A That's a light.

Q What's its range?

A Its range is 11 miles.

Q On your plotted course, would you have passed within 11 miles of that light?

A Yes, your Honor, we would.

Q Was the course laid in that direction with the intent of picking up that particular light?

A It was.

Q What's the range of the Roncador Light?

A Also 11 miles.

Q The mileage we are talking about is in terms of seeing the loom of the light? I think you estimated earlier that you could pick up Roncador Lights on radar up to 16 miles; is that correct?

MR. JACOBSEN: No. That was visually. We --

Q In other words, the visual sighting on the Roncador Light is greater than your radar reception of that?

A On that previous voyage --

MR. BAILLIE: I don't think that happens as a general rule. It happened on that occasion.

Q On that one particular occasion you did get a visual sighting before you got radar on it?

A As I remember, your Honor, that's the way it happened.

Q And the chart indicates Roncador Light has an elevation of 13 feet; is that correct?

A 52 feet.

Q 52. What's this figure over here?

A That indicates the height of the land at that point. There must be another piece of land sticking up on that point 13 feet high.

Q The height of the Quita Sueno Light is what?

A 45 feet.

Q These soundings are all in fathoms; aren't they?

A I prefer to refer to the actual chart itself. I made a notation here soundings in fathoms.

Q Did you or to your knowledge the master at any time prior to the stranding consider the possibility that the target you had on radar at a distance of a few miles might have been a wreck?

A No, your Honor, we did not.

Q Were there any other wrecks in the vicinity of your dead reckoning position besides the wreck off Quita Sueno Bank?

A The chart marks one wreck. I know now that there is also a second wreck. It is a Japanese fishing vessel, a short way north of the radar, conspicuous wreck in Quita Sueno.

THE COURT: I have no further questions.

It is five minutes of one. Is the witness excused as far as you gentlemen are concerned?

MR. JACOBSEN: Yes.

MR. BAILLIE: He will be around, however, if

if anyone wants him.

THE COURT: You are excused, Mr. Healy, but you understand that you are to stay in New York for a while.

We will break for lunch. We will resume at 2 o'clock.

(Witness excused.)

(Luncheon recess.)

AFTERNOON SESSION - 2 P. M.

THE COURT: Mr. Baillie, call your next witness.

J A M E S F R A N C I S K E L L Y, sworn by the Court.

THE COURT: State your name and address.

THE WITNESS: James Francis Kelly, my address is 37 Rowanbyrn Estate, Blackrock County, Dublin.

DIRECT EXAMINATION

BY MR. BAILLIE:

Q Captain Kelly, what is your vocation?

A I am a master mariner.

Q By whom are you employed?

A I am employed by Irish Shipping Limited, Dublin.

Q When did you obtain your master's license?

A In 1964.

Q How long have you been going to sea?

A I have been going to sea since 1954.

Q Were you an officer aboard the IRISH SPRUCE at the time she stranded?

A I was.

Q What office or position?

A I was chief officer.

Q As part of your duties did you stand a watch?

A Yes, I did, 4 to 8 watch.

Q Does the chief officer on an Irish Flag vessel have anything to do with the projecting of courses, determining which course is going to be followed?

A No, not as a rule.

Q And on the IRISH SPRUCE did you have anything to do with it?

A No.

Q Now, the vessel we have heard left Panama, Cristobal, sometime around 2 o'clock on the morning of the 26th. When did you come on watch after that?

A I came on watch at 0400.

Q Will you describe the weather conditions and sea conditions at that time?

A Partly cloudy and there was rough sea, a heavy swell, the wind was northeasterly six to seven.

Q What you are doing, Captain, is reading from the log book to refresh your recollection?

A Yes. She was rolling very, very heavily.

Q This continued throughout your watch?

A At 0422 on account of the very, very heavy rolling, we altered course to 021 true to try and break up the heavy rolling.

Q Was this something done by you or ordered by the master?

A As I recollect, the master was on the bridge at the time.

Q What were the -- you say it was hazy, the weather?

Was there any rain at that time?

A No, it was partly cloudy and clear and she was rolling pretty heavily.

Q When you next came on watch, what time was it?

A Next time I came on watch was 1600.

Q And you continued on watch how long?

A I continued on watch until 2000 hours.

Q Did you during that watch attempt to take a celestial observation to obtain a fix on stars?

A Yes, I did.

Q Can you tell us when that was?

A It was at coming on for civil twilight.

THE COURT: What time was that?

THE WITNESS: It was about 7 o'clock in the evening.

Q Were you able to obtain a fix?

A I wasn't able to obtain a fix. In the middle of taking the stars, it started to rain and the horizon was blotted out.

Q What is the effect of a hazy horizon or a blotted out horizon?

A You can't get an accurate celestial fix.

Q When you didn't get that fix, were you concerned about the position of the vessel at all?

A No.

Q You were proceeding on dead reckoning?

A Proceeding on dead reckoning.

Q Did it occur to you to take a direction finding bearing on anything?

A No, it did not.

Q Did you at any time examine the radio-beacon list that was aboard the vessel, exhibit 10, during that watch?

A No.

16 Q Had you ever in the past examined it to see whether or not there was any indication of an aero beacon on San Andres Island?

A No.

Q You discovered that that beacon is not mentioned in the geographical index?

A Yes.

Q Or the alphabetical index?

A No.

Q Have you had any experience taking running fixes by a single DF bearing?

A I never used DF for taking running fixes.

Q After you left watch, what did you do?

A I just went down to my room. I turned in I suppose about around 10 o'clock.

Q Were you still asleep or in bed when the stranding occurred?

A Yes, I was asleep at the time.

MR. BAILLIE: I have no further questions.

CROSS-EXAMINATION

BY MR. O'REGAN:

Q Mr. Kelly, do you recall testifying in this case in Dublin in April of 1972?

A Yes.

Q And at that time were the events surrounding the stranding fresher in your mind?

A Yes, but I have been two and a half months

on top of a reef and I would say I was a little bit shook up at the time.

Q Did you answer those questions truthfully and to the best of your ability at that time?

A Yes.

Q Referring to Exhibit 10, do you recall this question and answer:

"Q Would you look in the indices here if you wanted to use a radiobeacon?

"A Yes, that is the only place where you will find out where there are radiobeacons looking in there because most of the radiobeacons around here are aero beacons and you have to check in the index to see whether it has one."

Do you recall that question and answer?

A Yes.

Q Is that still your testimony?

A I am not sure exactly what you are getting at.

Q The question as read to you and your answer, is that still your testimony, to the best of your recollection?

A Would you read the question to me again?

Q "Q Would you look in the indices" --

referring to Exhibit 10 -- "here if you wanted to use a radiobeacon?

"A Yes. That is the only place where you will find out whether there are radiobeacons looking in there. Because most of the radiobeacons around here are aero radiobeacons and you have to check in the index to see whether it has one."

A I know subsequently that I was wrong in what I said there because there was a map in the back of the book.

Q But you did testify in April that you would look in the indices to find out whether there was a radiobeacon or an aero radiobeacon?

A I did, I was wrong. I found out subsequently that there was maps in it.

Q But you were not wrong in your belief in April of 1972 that you would use the indices to find out whether there was an aero beacon in the area; is thatcorrect?

A I was wrong in that I didn't know. I should have known that there was one in the back of the book.

Q That's not my question.

My question is: Would you look into the

indices in Exhibit 10 to find out whether there was an aero beacon in the area?

A I would. It would be one of the things I would check, yes.

Q Then you now know that Exhibit 10 --

A What is Exhibit 10?

Q That is the Admiralty List of Radio Signals which were aboard.

You now know that the San Andres Aero Beacon is not listed in any of those indexes; is that correct?

A It is listed in the back of the book.

Q Referring you to Exhibit E, have you seen that publication before?

A I have, yes.

Q Do you know whether the San Andres aero radiobeacon is listed in the indices in that book?

A I'd have to have a look.

Q Please do.

(Handing)

A Have you got the map?

Q I'd like you to look.

A Do you know what's the area it's in?

Q Columbia.

A There is a what-you-call-it, a supplement

of this with the banks in the front of it that is normally supplied with it. It is listed as 5439 Isla San Andres.

THE COURT: What's the significance of the numbering?

THE WITNESS: The number is an easy readily means of identifying the station. They are listed from 0 to 6,000 or so.

THE COURT: You can look at the back of the book and look it up under the number?

THE WITNESS: Yes. With this system here they have the chart as well, they have the number on it, and you just come to it on the chart in this book and it is here.

Q Mr. Kelly, what page are you looking at in that publication?

A 183 ~~163~~.

THE COURT: What exhibit is this again?

MR. O'REGAN: This is exhibit E, your Honor.

Q On page 183 does it give information as to the power of the San Andres aero radiobeacon?

A Yes.

Q Which is listed as what?

A One kilowatt.

Q Is that information listed on the chart in the back of Exhibit 10?

A SPF 387. Just gives the call sign of the station plus the frequency it operates on.

Q It doesn't tell you what the power is, though, does it?

A No.

Q You wouldn't know what the power is by looking at that chart, would you, the pull-out on Exhibit 10?

A No.

Q I refer you now to page 183 of Exhibit E and the abbreviation cont. What does that stand for?

A Continuous.

Q Does that mean a station is operating continuously, that is night and day?

A Yes, it usually does.

MR. O'REGAN: Would you read the last question and answer for the Court.

(Record read.)

Q So that using this publication --

A Excuse me, I would just like to look at the front just to make sure.

Q Yes, continuous.

Q So that if you had this publication, namely Exhibit E, on board your vessel, you would know from looking at page 183 that this radio station operates continuously; is that correct?

A Yes.

Q Would you look at the Exhibit 10A, which is the pull-out on the back of Exhibit 10. Would you learn that information from that pull-out?

A No, you only get the frequency and the call letters, and the call sign, yes.

17 Q How do the RDF equipment on the IRISH SPRUCE compare with the RDF equipment on other vessels on which you serve? In other words, was it in good operating condition?

A It was, yes. It was not automatic.

Q What does that mean?

A Well, with the very, very modern sets you can switch them on to automatic and they will monitor for you or hunt for you and give the bearing, whereas on the IRISH SPRUCE you had to look for a zero.

Q Difference is you have to do it manually rather than automatically?

A Yes.

Q It gives you the same information, doesn't it?

A It does, yes.

Q Do you consider a radio direction finder to be a reliable piece of equipment when navigating your vessel?

A It is an aid to a navigator.

Q And have you used it as such?

A Yes.

Q Do you find it to be reliable?

A It depends on the circumstances, whether it is used in day or at night and the weather conditions prevailing at the time.

Q Have you used it at night yourself?

A I have, yes.

Q And have you gotten useful information from it by using it at night?

A I have, but I got a lot of useless information by using that at night.

Q What does that mean?

A At night you get what they call night effect as well which sometimes the sky wave and the ground wave clash.

Q That occurs, as I understand it, generally just before and after sunrise and just before and after sunset; is that correct?

A Sometimes it also can happen during the night as well.

Q It can happen?

A Yes.

Q It does happen all the time; doesn't it?

A Doesn't happen all the time. Aero radiobeacons, it sometimes happens a lot more than the marine navigational beacons.

Q Are you sure of that?

A Yes.

Q What do you base that opinion on?

A Aero radiobeacons are solely for aircraft. Marine navigation beacons are more or less solely for ships.

Q Do you mean that they put up a different type of signal or do you mean you think that aero radiobeacons should be used by planes and that marine radiobeacons should be used by ships?

A No.

Q Explain your answer, would you please.

A Well, aero radiobeacons are primarily for aircraft, you know, the waves go upward. Whereas with marine navigation all beacons, they are on the sort of the same plane.

Q Have you ever received any instructions as to the operation of radio direction finder equipment?

A I have.

Q From your company?

A At school, and on board various ships I have served.

Q Has anybody told you that aero radiobeacons throw out different types of signals than marine radiobeacons?

A It is in the front of that, as far as I know. This one I couldn't tell you which.

Do you want me to look for it?

Q Please.

A "Marine Radiobeacons are generally sited in such a way as to obtain an uninterrupted transmission path over as wide a sea area as possible, and they generally operate in such a way as to facilitate the taking of cross-bearings. Air navigation techniques, on the other hand, generally require radiobeacons to be sited in such a way that aircraft may fly direct from beacon to beacon, and it is also necessary that radiobeacons for aircraft use should operate continuously in all weathers during their hoursof service, so that the 'radio compass' (automatic D/F) aboard

the aircraft may give continuous readings."

Q What page is that on?

A 65.

Q Would you say based on that that in your opinion that the type of signal you receive from an aero radiobeacon is different from the type of signal you would receive from a radio, a marine radiobeacon?

A I am just going down. It is a huge big paragraph on it.

"It must be clearly understood that the inclusion of an aero radiobeacon in this volume does not imply that it has been found reliable for marine use. Aero radiobeacons are not generally calibrated for use at sea level. The information available concerning unreliability of bearings refers only to the altitudes at which the aircraft fly."

There is a whole PAGE more. That's what I was talking about there.

Q I refer you now to page 14 of Exhibit E, and in particular the paragraph numbered 4 at the top which states: "A number of aero beacons considered to be particularly unsuitable for marine use have been omitted from this edition."

Now, if you find an aero beacon in this book

would you assume that it is unsuitable or suitable for use, marine use, based on this information on page 14?

A I presume it was suitable. By the same token bearing this in mind: They cannot go around the whole world vetting aero beacons by use of ships.

Q When you pointed to this edition you referred to Exhibit 10 which had been superseded by Exhibit E at the time of the stranding; is that correct?

A Yes.

Q Are there any written instructions or standing orders from your company concerning the use of radio direction finder equipment on board your ship?

A Not beyond that sort of a general standing order that you should use all the aids to navigation whenever possible and familarize yourself with them.

Q This would include radio direction finder; would it not?

A Yes.

Q But beyond that there is nothing specific concerning radio direction finder from your company?

A Not to my knowledge.

Q If on your navigational chart it was in-

dicated that an aero radiobeacon existed on San Andres would that have induced you to take the RDF, use the RDF and take a bearing on it?

A No, not necessarily, because I went out to take stars at 7 o'clock in the morning, and you have just mentioned yourself, it is not good to take radiobearings two hours before or two hours after sunset.

18

Q No, that wasn't what I said.

You explained to me the night effect which occurs generally at that time.

Do you recall this question and answer in your April testimony in Dublin?

A I do, sir.

Q "Q If you have a chart that showed an aero radiobeacon on San Andres would that have induced you to use the RDF and take a radio bearing?

"A I would have taken one, yes, particularly after not getting the star."

A I must have forgotten about the night effect.

Q When did you remember the night effect?

A I couldn't say. I knew about night effect all along. It just didn't occur for me to mention it.

Q You must have forgotten it in April, which

was only a few months after the stranding, but you remembered it sometime thereafter?

A Yes, I knew about it at the time I was making the statement.

Q Pardon me?

A I say I knew about it then, the night effect.

Q But you said in your testimony, if I read it correctly, that if you had known there was an aero radiobeacon on San Andres you would have used it particularly after not being able to obtain stars. Is that still correct?

A That's what I said, yes.

Q Is that your testimony today?

A Yes. I remember about the night effects since.

THE COURT: I don't think that they are really asking you that question.

To put it in different context, assuming you had been on watch at midnight when the night effect is not as bad when it is toward sundown and in light of the fact that you had not been able to get a star sight and had no other navigational aid since the sunlines were taken during the mid day, if you had known of San Andres beacon, would you had you been

on watch attempted to get a bearing on it?

THE WITNESS: I would, your Honor.

MR. O'REGAN: No further questions.

REDIRECT EXAMINATION

BY MR. BAILLIE:

Q Is it not a fact, Captain, that you gave no consideration whatsoever at any time during your 1600 to 2000 watch to taking of radio bearing?

MR. O'REGAN: Objection.

THE COURT: What's the nature of your objection?

MR. O'REGAN: Objection withdrawn.

A I gave no thought to taking a radio bearing during that time.

Q Captain, are you familiar with the note in the Admiralty List of Radio Signals published in 1971, volume 2 on page 13 numbered 1?

THE COURT: Which exhibit number is that?

MR. BAILLIE: The exhibit number is E.

Q Would you read that please into the record.

THE COURT: What page is it?

MR. BAILLIE: 13.

A "Caution. It is very important to bear in mind the following facts when using aero radiobeacons:

1. The inclusion of an aero radiobeacon in this volume does not imply that it has been found reliable for marine use."

Q Thank you.

Is it not also a fact, Captain, when a volume such as this uses the word or the abbreviation for the word continuous that that depends upon the condition of the radiobeacon, it may be broken down at any time?

A Yes.

Q It doesn't necessarily mean that is in operation continuously, does it?

MR. O'REGAN: I have to object to those questions. He is not here to talk about maintenance of aero radiobeacons.

MR. BAILLIE: That's exactly what I am talking about.

THE COURT: He is a master mariner and he therefore assumes to know both these in his expert capacity and in his individual capacity.

MR. BAILLIE: No further questions.

RECROSS-EXAMINATION

BY MR. O'REGAN:

Q Have you ever known from your experience

the aero radiobeacon on San Andres to have been broken down?

A No.

Q I also refer you to page 13 of Exhibit E which Mr. Baillie pointed you to, this caution, this cautionary section there. Will you please refe to the paragraph right above that. I will read it to you. "Aero marine radiobeacon.

"A radiobeacon established"-- I am reading the wrong part.

"Aero radiobeacon (aero RC)

"A radiobeacon established for the use of aircraft. Shown as aero RC in column 2 of station details and on charts. Only selected aero radiobeacons likely to be of particular use for marine navigation are listed and charted."

In view of the reading of the selected portion as was read to you by Mr. Baillie, I would just want to bring that to your attention. No question.

MR. BAILLIE: Is this an argument or what?

The portion follows what was just read, does it not?

THE WITNESS: It does indeed.

REDIRECT EXAMINATION

BY MR. BAILLIE:

Q Did you ever have occasion to take a bearing on San Andres station?

A No.

THE COURT: Do I correctly understand that Captain Kelly is the senior officer of the vessel that would appear live as a witness here? The master of the vessel is not going to testify? Merely his deposition?

MR. BAILLIE: As I understand it, he is at sea.

BY THE COURT:

Q Captain Kelly, you mentioned that Exhibit E indicates the power of the San Andres beacon as being one kilowatt.

A Yes, your Honor.

Q Am I right in understanding that the useful range of a beacon depends upon its power, the weather conditions and the capacities of the equipment used to receive it?

A Yes, your Honor.

Q Are there any other considerations?

A Would you repeat the question?

Q Are there any other considerations in determining the range of a radiobeacon besides the power of the signal, the existing weather conditions and the capacity of the receiving equipment aboard the vessel?

A Sometimes when you get these what you call solar --

Q That would be weather conditions.

A I suppose so.

Q Anything else?

A You got static.

Q That's normally due to weather conditions; is it not?

A Yes.

Q Although it could be due to the operation of other electronic equipment in the area?

A Could be.

Q You had no other electronic equipment in this area at that time, did you?

A No.

Q Can you give me any approximation based upon the power which we know to be one kilowatt and the weather conditions which you can tell from the log and your personal familiarities with the RDF

equipment on the IRISH SPRUCE as to what the maximum range of that aero beacon would have been for navigational purposes?

A If I can have a look at the book there.

MR. O'REGAN: Referring to Exhibit E.

THE WITNESS: Output power, one kilowatt. Range, 240 miles. It is very unusual for us to use DF over above 50 or 60 miles.

Q But with a radio signal of course you don't get a fix, you merely get a line of position?

A Yes.

Q The value of a line of position would depend on the angle from which it was coming?

A Yes.

Q Can you tell me from the charts which are already in evidence the approximate distance and bearing of the San Andres aero radiobeacon at the time of the stranding?

A I'd have to have a look at the chart.

THE COURT: Give him the chart. That's Exhibit 6.

THE WITNESS: About 118 miles approximately.

Q What was the bearing, just roughly?

A The bearing I would say would be about 101.

It would be about 190 from Quita Sueno.

Q If you had been able to get an RDF bearing it would have given you a fairly good longitudinal position?

MR. BAILLIE: I have to take exception to that.

THE COURT: I am asking a question. It was almost due north of you almost in the direction you were heading, the line of position would have been longitudinal rather than latitudinal; would it not?

THE WITNESS: It would have been. Old Providence Island is right in between. It is about 1200 feet high.

BY THE COURT:

Q It might have locked (sic) you?

A Might have been in fact to draw the signal to it or divert it from it.

Q Would you agree, Captain, that the best navigational aid when navigating on open waters are celestial observations?

A I would, yes.

Q In the absence of celestial observations, what do you view as being the most useful aid to navigation on the open sea?

A Well, with the equipment we had, there was Decca --

Q I am not asking on equipment you had there. I am asking if you could have had any equipment aboard, what would be most useful?

A Commercial equipment, Omega.

Q How does Omega work?

A Omega works, I think it is a very -- it is a low frequency transmission and its lattice chart.

Q Your vessel was not equipped with Omega?

A No.

Q How was the Omega serviced in those waters?

A I don't know. It is looked after by the United States.

Q After Omega, what's the next most useful navigational system?

A In the open sea I would say Loran.

Q Your vessel was not equipped with Loran, was it?

A No. Loran is only good in the northern hemisphere. There is no Loran in the southern.

Q Your vessel was equipped with Decca?

A Yes.

Q Where is Decca used for, in what seas?

A Decca is used all over the world, used all around Europe, Persian Gulf, India, Japan, South Africa, Australia.

Q Is it useful anywhere in this hemisphere?

A There used to be a chain outside of New York, but there is a Canadian chain, Anticosti and New Finland.

Q Aside from this Canadian chain, is there any Decca stations in this hemisphere?

A Around New York?

Q Anywhere in the hemisphere other than up in Canada can you use Decca?

A Beyond -- the U.K. and Europe -- it is not--

Q The hemisphere includes North and South America?

A No, there is none down there.

Q Is there any in the Caribbean waters?

A No.

Q Is Loran useful in the Caribbean waters?

A As far as I know, yes.

Q How long had your vessel been operating between North and South America?

A I joined her in September and I think she had been about -- when the accident happened, I think

she had been trading since the previous June.

Q She spent seven or eight months running back and forth between North and South America?

A Yes, she did one trip up the West Coast of the United States, San Francisco.

MR. BAILLIE: Did your Honor ask from the time he joined the ship, prior to the time he joined the ship or what?

THE COURT: He only knows about a period of 7 or 8 months.

THE WITNESS: The ship came out. This is only -- not exact. The ship I think I left Liverpool and left to South America. When she came up North America, New Orleans, is the next time I joined her. She was in that area for about seven months, including a three-month trip up the West Coast. She had been in this area about two, three months.

BY THE COURT:

Q Is there any way that the Decca equipment could have been altered to make it useful with Loran?

A No.

Q Do any of the Irish Shipping Line vessels that operate continuously in this hemisphere have Loran equipment?

A No, they are all Decca.

THE COURT: I have no further questions.

RECROSS-EXAMINATION

BY MR. O'REGAN:

Q Aside from celestial navigation, aside from Omega, which you didn't have, Loran, which you didn't have, and Decca, which was of no use to your vessel in these waters, what would be the next best means, the next best navigational aid on the open seas?

A DF.

MR. O'REGAN: That's all.

THE COURT: You are excused, Captain.

(Witness excused.)

MR. BAILLIE: Captain Raftery.

Captain, would you bring with you the file of records.

C O L E M A N C. R A F T E R Y, sworn in by the Court.

THE COURT: Please be seated and state your full name and address.

THE WITNESS: Coleman C. Raftery, Rockbarton Ardnamara Malahide County, Dublin.

DIRECT EXAMINATION

BY MR. BAILLIE:

Q Captain, do you have a master mariner's license?

A I do.

Q Issued by whom?

A Issued by the Department of Transport and Power.

Q Are you employed by Irish Shipping Limited?

A I am. I was employed by Irish Shipping Limited at the time of this happening.

Q You imply that you are no longer employed by Irish Shipping?

A I am employed by a subsidiary of Irish Shipping called Irish Continental.

Q At the time that this accident happened, what position did you hold?

A Marine Superintendent for Irish Shipping.

Q And included in your duties would be what, the furnishing of the vessels with various publications?

A Included I would be responsible to the operations manager for publications and nautical equipment to the vessels among other things such as maintenance of equipment and survey of equipment and dry docking of vessels, and personnel applied to the vessels.

Q I am particularly interested in nautical publications.

A Yes.

Q Will you explain to the court what the routine is through which a nautical publication published by the Admiralty will get eventually to one of your ships?

A Yes. Our procedure, normal procedure is that we have a contract with a recognized Admiralty agent. That Admiralty agent is Coos of Hull, and they forward to us when they become available to them the notice to mariners from the Admiralty Hydrographic Office. On receipt of these notices to mariners in the head office they are assembled with any other information, notice to mariners, anything that we may consider of importance to the snip either locally or abroad, and they are sent out with a circular letter every Friday to the vessel. This circular letter has an acknowledgment attached to the bottom of it, which the ship signs, which he receives the notice to mariners. On receipt of the notice to mariners the vessel uses either ~~the~~ TO correct charts or publications or anything else that may come up there and they also use the information that's in the publication to order any new

publications that they may require.

Our procedure also tells our masters that any publication that they require urgently they may purchase it locally if they so wish, or if they cannot get it locally, that they should contact us, and we will make arrangements to get it out to them as quickly as possible.

Q Now, with particular reference to notice to mariner number 37, notices to mariners number 37 and 44, 1971; do you have records as to when the company received those notices and when they sent them to the IRISH SPRUCE?

A Yes, I do. I have it here with me.

Q Will you examine those records and let us see what you have?

THE COURT: Are these two notices to mariners exhibits?

MR. BAILLIE: 44 is included in our exhibits. 37 was not taken off the vessel, but we have copies here.

Q Do you have a copy of 37?

A I don't have it here,but it is.

Q Who has it?

MR. BAILLIE: We have one here. It is in

evidence already as W.

THE COURT: Number 37 is W.

What is number 44?

MR. BAILLIE: Number 8. I am taking this out of the pile, your Honor.

THE COURT: Why don't you just keep it on top. I am assuming it is the most important.

MR. BAILLIE: That's right.

THE COURT: Make it the top one.

Go ahead.

MR. BAILLIE: I would like to have the Captain refer to the exhibit.

BY MR. BAILLIE:

Q Captain, does that not include mention -- does that not mention the new pilot for the West Indies area?

A Yes, it does,yes.

THE COURT: I don't know whether he ever answered the preceding question about when he sent these to the vessels.

MR. BAILLIE: We are getting to that.

THE COURT: You asked him earlier. The question was left hanging.

MR. BAILLIE: I think I asked him whether

he had any records. I was going to ask him to produce them.

THE COURT: All right.

Q That refers to the pilot; is that right?

A Yes.

Q Number 1.

A Refers to first edition of the East Coast of Central America and Gulf of Mexico Pilot new publication 69A; the first edition of East Coast of Central America and Gulf of Mexico Pilot dated the 7th of August, 1970 has been published; price 1.75 pounds sterling.

Q When was that notice to mariners published?

A The notice to mariners is dated the 18th of September, 1971.

Q When did you receive it? Do you have a record of that?

A I do. The exact time it came into the office I cannot say, but I do know that it was sent out from the office on the 8th of October, 1971. And I do know that the week prior to that, on the first of October, 1971, we sent out Admiralty Notice to mariners number 36.

So therefore it had arrived in the office

between those two dates.

Q And did you have an acknowledgment of receipt of that notice aboard the ship?

A Yes, I have an acknowledgement from the ship dated the 19th of the 11th, 1971, signed by the master, James Kerr at Tacoma.

MR. JACOBSEN: What was the date?

THE WITNESS: The 19th of the 11th, '71.

Q November 19?

A November 19.

Q And with respect to notice to mariners number 44, when was that published and when did you receive it?

21 A Notice to mariners number 44 is dated week ending the 6th of November, 1971, and that notice went out with our circular letter to the vessels on the 26th of November, 1971.

As to the date that it came into the office, I can only say that it wasn't in the office the Friday before, which was the time that we sent out notice to mariners number 43. Therefore it was received in the intervening period.

Q Do you have a receipt by the ship indicating its receipt by the ship?

A I have a receipt from the master James Kerr saying that he received it in San Francisco on the 7th of December, 1971.

Q Subsequent to this, to the last date, did you receive in the office a requisition from the ship?

A I did, I received a requisition.

Q A copy of which has been previously marked Exhibit P and if so, what did you do with that?

A This requisition was sent to us from Callao on the third of the 4th, '72. I do notice that a copy of this requisition went to our Admiraly chart agent on the 12th of the 1st, '72.

Therefore, it had arrived into our office by that time and had been sent out by our purchasing department to our charts and nautical publication supplier.

Q Do you know whether or not they sent out the pamphlet with which we are concerned, the publication with which we are concerned?

A Yes.

Q Where did they go to?

A They sent them to New Orleans.

Q Do you have any idea of when they were sent?

A They were to arrive in New Orleans about the 23rd of January.

Q Why didn't you ask that they be sent to South America?

A Well, we have had a bad experience with sending mail down to South American ports and we have had various reports from vessels not receiving their mail in these ports.

Q Do you know enough about the practices of other shipping companies to know whether or not this differs substantially from what they do?

A I do. I have checked with some companies, and the procedures are basically the same.

Q A new publication of this sort generally, what does it consist of? I am referring to the Admiralty Pilot, for instance.

A Well, new publications normally I think they are promulgated after one has accumulated a certain amount of information that has been sent out in supplements and notice to mariners attached and that the publishers, they do take it on themselves of periods of about every ten years to renew the publication and change it up to date.

Q What is the material in it, the material that

has been sent out previously?

A Normally it has been covered in those notices for supplements prior to that, and they do give you an indication as to the last correction or supplement that would be included in the new publication.

Q Is it a fact that you were sent down to the vessel after she stranded?

A I was sent down to the vessel.

Q And did you check her navigational equipment at that time?

A Yes, I had to look at all navigational equipment.

Q In what order did you find it?

A I found all that navigational equipment in good working order.

Q Did you come to any conclusion as to how this thing happened, how the stranding occurred?

MR. JACOBSEN: How do you mean, on what basis, as a result of hearsay or what?

Q Did you conclude on the basis of your investigation anything with respect to the cause of the stranding?

MR. JACOBSEN: Objection, your Honor, unless we know whether this is hearsay or what.

THE COURT: Just a second. Well, I think the question is improper at this time until you establish the nature of the investigation he made and how he made it. Whether or not he should be allowed to give an opinion which is other than hypothetical since it goes to the ultimate question, I am not certain. But I think you ought to establish what investigation --

MR. BAILLIE: I think you are right, your Honor. I withdraw the question.

We have an expert here who can testify.

BY MR. BAILLIE:

Q Do you have anything to do with the officer personnel of the vessels, did you before you went to work for the subsidiary?

A Yes.

Q Can you give us any -- do you have any opinion as to the qualifications of Captain Kerr as a navigator, a skipper of a ship?

A Well, I have since taken up my appointment ashore. I met Captain Kerr regularly on various vessels that he had been appointed to, and I also know that he had been a master with us for a period of about 15 or 16 years.

It is part of my duty to report to management

on the senior personnel on board the ship. And I have had no occasion to report anything; that I found him and the ship he was in charge of to be in good order, and satisfactory in all respects.

MR. BAILLIE: No further questions.

CROSS-EXAMINATION

BY MR. JACOBSEN:

Q Captain Raftery, where was the ship when it received notice to mariners number 37? Did you say before --

MR. BAILLIE: Tacoma I think you said.

Q The ship acknowledged it November 19, 1971?

A Tacoma.

Q And that was November 19, 1971?

A November 19, 1971.

Q So that notice to mariners number 37 was sent out from Dublin on October 8, 1971?

A Yes.

Q That's the one that refers to the new edition of the pilot?

A Yes, sir.

Q It refers to this pilot, doesn't it, the one that's marked Exhibit D?

A That's correct, yes.

Q And this pilot here, Exhibit D is entitled "East Coasts of Central America and Gulf of Mexico Pilot," is that correct? According to the preface it supersedes West Indies Pilot Volume number 1, 11th edition, 1956, Chapters 5 to 10, supplement number 6 dated 19th of March, 1968?

A Yes.

Q In other words, there has been a revision of their setup, they renamed these pilots and taken some information out of them, it was in one and changed the set up?

A Yes.

Q You mentioned other companies. Don't you know of any companies that send out a document like the pilot to the ship from the head office?

A Do I know of?

Q Haven't you ever heard of a shipping company sending out something out like the list of radio signals or pilot or chart directly to a ship without waiting to be asked for it?

A I'd say there could be companies that would do it.

Q When the office in Dublin received this, say this notice to mariners number 37, Exhibit W, what does

a company do, if anything, with respect to this other than mail it out to ships, do they read it?

A No, we don't.

Q Does anybody in Dublin read it?

A No.

Q Is a copy kept, a file kept of these notice to mariners in Dublin?

A Yes.

Q So the information is there at least in the head office in Dublin?

A We keep two or three copies.

Q If anybody wanted to go in the office and look at the file and notice to mariners, the file of notice to mariners after October 8, 1971, they would have seen this number 37 there?

A Yes.

Q Inside there would have been this notice about the new edition of the pilot?

A There was, yes.

Q And in the normal procedure with Irish Shipping, I take it, if somebody out in the ship decides they want a new book the order it like this on Exhibit P?

A That would be normal, but the procedure is

that the master has complete authority to publish -- to purchase anything that he wants at any time for the navigation of the vessel.

He doesn't have to wait for this to come in to head office.

Q Well, I suppose he has to wait until he gets the notice to mariners and then order it?

A Yes, he has.

Q Anything he sees in there?

A He has to wait to get the notice to mariners.

Q And that order goes back to Dublin?

A Yes.

Q For example, Exhibit P, which is dated the January 3, I notice on there both the pilot for the East Coast of Central America, which is Exhibit D, and the list of radio signals, volume 2, 1971, which is Exhibit E, both of those are listed on this order form?

A Yes.

Q Exhibit P?

A Yes.

Q How do the notices to mariners come to Dublin, they come from Hull?

A They come from Hull.

Q Does Irish Shipping in the head office in

the head office, do they have a copy of the radio list of signals and the pilots?

A They don't.

Q They don't keep a file of them?

A No.

Q They do keep a file of the notices to mariners?

A Yes.

Q I notice that the price of the pilot here I think you testified is only one pound 75 pence,

A That's right.

Q Don't you think it would have been a good idea for the head office in Dublin in view of the value of the cargo on board to airmail a document like that, a new pilot out to the ship at a convenient port?

A Well, our procedure is pretty well explicit and if the master requires anything, he can purchase it himself without consulting me.

If he is routing after he has gone through these notices and he sees that he cannot get it in sufficient time, all he has to do is Telex a head office, and we will get it for him.

I think if we started interferring we would be getting cross purposes and we wouldn't know whether we should be ordering or whether he should be ordering.

Our instructions are explicit, and we leave that with the master and the officer on board?

Q If a new pilot went out in the same batch of papers that say the Friday papers that the notice to mariners went out, then he had found out about the new pilot at the same time he got the notice to mariners, get the new pilot at the same time, in other words, they had arrived at the same time, he wouldn't get two that way.

A You said if a new pilot?

Q What I am suggesting is that the new pilot, like Exhibit D, was airmailed out with the notice to mariners like the one numbered 37, which is Exhibit W, was sent out at the same time on October 8, then the ship would have gotten them both at the same time?

A I am not very sure that that book even though it says that it is published, is with any of the Admiralty agents that quick because our experience is that even the notice to mariners, while it has a date of maybe the 17th or 18th of September, our Admiralty agents in the U. K. don't receive that in their own offices for up to ten days after.

If there is another -- there may be four or five days left before it comes to us.

Q I take it with your procedure though the notice to mariners, for example, this number 37, which is dated 18 September first goes to your agent in Hull?

A Yes.

Q And then when they get it, after some time they mail it to Dublin?

A Yes, they mail it.

Q Then after sometime you mail it to the ship?

A That's the procedure.

Q On a Friday?

A Yes.

Q Then after the ship gets it when they get a chance to look at it they make an order?

A They make an order or purchase.

Q Then that order goes back to the Dublin and then what happens after the order like Exhibit P, what happens to that after it gets back to Dublin? What do you do with that?

A We return -- we send that order to our chart agent.

Q That would be sent to Hull?

A Hull, yes.

Q And then Hull, they would purchase the pilot

that the IRISH SPRUCE asked for.

Where would they get it, Hull?

A They should by that time. Apparently, what was required in that particular order, it took them a number of days to assemble it. They didn't have everything that was on from the agent at that time.

Q Then they mailed that back to Dublin?

A We directed them to mail it to the ship at the best port that we think she will receive it at.

Q Is there any outlet for this material in Dublin?

A There isn't.

Q How about stores?

A There are two agents, but they never have the publication. We tried to get the publication, but they just don't stock them.

Q You haven't told the agents in Hull to air-mail these things to the ship as soon as they are issued?

A No.

I think I should as owners, we should know what they are shipping out and not let them have a free hand and us not to read it over --

Q Do you receive order forms, you, I mean does

the office in Dublin receive order forms like Exhibit P from the other vessels in the fleet from time to time?

A Yes, we do.

Q Do you keep a record of these?

A Yes, there should be a record.

Q So that the means are in the office in Dublin to look in the file and to see what each ship has ordered and presumably send it out?

A Yes, there should be.

Q Is there any outlets for these British publications in the Panama Canal area?

A There could be an agent down there.

Q What about San Francisco, New Orleans?

A You asked me about the Panama Canal. I do realize there is because I actually checked while the vessel was down at the reef and I tried to purchase some of the charts, and they weren't available.

THE COURT: They were not?

THE WITNESS: They were not available.

Q Did they have some documents available like pilots and radio list, light list?

A They didn't have anything that would have been up to date or current in connection with British

Admiralty publication.

Q What about New Orleans, San Francisco?

A There are agents in these ports. Whether they have the up to date equipment, I do not know.

Q There is one in Montreal, isn't there?

A Yes, there is.

Q Kelvin Hughes has an office with publications like this in Montreal; does he not?

A I am not sure.

Q Notice to mariners number 44, which is under Exhibit 8, do I understand that that went out from Dublin on 26 November?

A Yes, it went out on the 26th of November.

Q And that's the one that refers to the new Admiralty List of Radio Signals, Volume 2 of 1971?

A Yes.

Q Which is priced one pound 70 pence; is that correct?

A Yes, that's correct.

Q How many vessels in 1972, how many vessels were there in the Irish Shipping Limited Fleet?

A At that time I think we might have had 11 vessels.

Q Were some of these chartered to Peruvian Line

in addition to the IRISH SPRUCE?

A No. To my knowledge it was just the IRISH SPRUCE. There were some chartered.

Q The IRISH SPRUCE services where, is it world-wide or more limited to --

THE COURT: You mean the IRISH SPRUCE?

MR. JACOBSEN: I mean Irish Shipping.

A There are some ships on regular trades and the rest of the ships are world-wide charters.

Q Where was the IRISH SPRUCE on charter?

A She was --

Q To Peruvian Line?

A Yes.

Q Where do the ones go that are on a regular service, not chartered out?

A We have one ship, it is on a time charter, but it runs from Casablanca, from North Africa to Dublin. The others that are on charter, they do the Pacific, West Coast to Japan back to the West Coast and back to Europe.

THE COURT: The West Coast of the United States?

THE WITNESS: West Coast of the United States and Canada.

Q But regardless of the type of ship in the Irish Shipping Limited Fleet, the procedure is that the head office mails out the notice to mariners once a week and then it is up to the personnel on the ship to order or get the up to date publication?

A Yes, it is up to the personnel on the ship to send us in the requisition.

Q In answer to one of Mr. Baillie's questions, I think you indicated that a new edition just brings up to date the old one. But it is also true, isn't it, that occasionally the new edition follows a new format or new way of presentation?

A It could be quite possible.

Q Or has new information?

A Could be. It could be quite possibly new information or information from the old one assimilated in a different way.

Q Or change in routes?

A Quite possible, yes.

Q Or for example a change in emphasis about the use of aero-radio beams?

A It is quite possible.

Q For example, in the pilot there could be a caution in the new pilot, but currently that wasn't

included in the old pilot; isn't that true?

A There could be, yes.

THE COURT: Was there?

THE WITNESS: In this particular new pilot, there is a caution in this one in relation to Quita Sueno Bank, but the same type of information is in the other one in a different place.

Q Well, I suggest to you that the information in Quita Sueno Bank about the current is not in the 1956 pilot, but you go ahead and check it.

THE COURT: Captain Raftery, take the other pilot, the earlier pilot, and see if you can find that caution concerning the current anywhere any place?

MR. BAILLIE: I don't think he said that particular caution. I think he said he could find the same information, which is quite different.

THE COURT: Show us the information.

THE WITNESS: Actually I am referring to page 23 of the West Indies Pilot, volume 1.

Q Is there a mention of Quita Sueno Bank there?

A There isn't a mention of the bank as such.

Q But in the new pilot, Exhibit D, there is a specific caution, isn't there, in connection with Quita Sueno Bank?

A Yes, there is a caution here. There is a general statement here about that particular latitude, the type of current that should be experienced.

THE COURT: What are you referring to, please? Would you read what you are referring to.

THE WITNESS: I am referring to Exhibit 23, which states that the average flow of the westerly and northwesterly currents of the main part of the Caribbean Sea is nearly constant throughout the year being about 19 and a half miles per day in November to July and about 20 and a half miles per day in August through October.

There is thus very little seasonable variation.

Figures 1 and 2, which are the two maps showing the direction of flow, show that there is considerable variation of the average strength of the current in different parts of the sea at the same time, and this applies also to the other two quarters. That's November to January and May to July. In general, eastward of about longitude 78 west of the average rate of current decreases with increasing latitude.

Then it says in all parts of the sea a considerable proportion of the currents experienced do not exceed the rate of one knot but currents up to

two knots are frequently met. Then it says occasional currents of from two to three knots occur at all times of the year southward of latitude 16 north. Most of these are found southward of latitude 14 north. And it says a few currents exceeding three knots have been reported in May to October southern of latitude 14 north.

Q I direct your attention to Exhibit D and the Quita Sueno Bank. Could you see the caution there?

A Current caution.

Q Would you read that, please?

A "Caution should be exercised when passing eastward of Quita Sueno Bank as the current here is set strongly to the westward and on the bank."

Q Now, I direct your attention to the old pilot, 1956 pilot, which is Exhibit 10 -- no, Exhibit 7. Does such caution appear in the old pilot?

A The caution for Quita Sueno does, but it does for most of the other banks.

Q The one you just read in the new pilot about caution does not appear on the old one, does it, in connection with Quita Sueno Bank?

A No, the caution does not appear on it.

Q Referring to the old pilot, Exhibit 7, that

was never corrected with a notice to mariners before the new pilot was issued, which is Exhibit D there; isn't that correct?

A This was never corrected.

Q Isn't that correct?

A It was corrected with this supplement.

Q With respect to the we are talking about, which you just read into the record?

A No, that caution, there wasn't anything to my knowledge came out.

Q In other words, the old pilot was not corrected to have that caution in it?

A No. I would imagine -- I might be wrong in my assumption -- that while this information is here, it was already in this booklet and the publishers, the Admiralty, didn't think it was necessary to send out a notice about it.

Q Because the new book was issued?

A Because the new book would have it and there is sufficient information about the currents in the old book.

Q That's not my question. My question is: That the old book was never corrected to have the caution in it with respect to Quita Sueno Bank that

you just read in the new book; isn't that correct?

A There is no correction came out for it.

Q That's correct, there was no correction of the old book?

A To my knowledge.

Q The only place you see it is in the new book?

A Yes.

Q Exhibit D?

A Yes.

Q So that the new pilot is not the same as the old pilot corrected?

A Yes, I agree it is not the same. They are two different books altogether.

Q Would your office's records in Dublin show the order forms that came in from other ships during the fall of 1971 with respect to pilots and lists of radio signals?

A I amsure they would.

Q They would show whether or not you sent those out to those other ships?

A I am sure they would.

MR. JACOBSEN: No further questions.

REDIRECT EXAMINATION

BY MR. BAILLIE:

Q Captain, in your opinion would not a master mariner with some experience appreciate from what you read in the old pilot that he might run into unusual currents?

A I would say so.

Q Anywhere in that area?

A Yes, sir.

MR. BAILLIE: I have no further questions.

THE COURT: I have a few questions.

BY THE COURT:

Q Captain, do you know where the British Admiralty got the caution concerning Quita Sueno Bank which is included in the current volume before you?

A I don't know, but I would assume that was probably on the authority of some American publication.

Q I think we have in evidence the American sailing directions for that area.

MR. JACOBSON: Yes.

THE COURT: I'd like the witness to look at it.

THE WITNESS: I would accept that they put in the insertion on the authority of this book, as I do know that they do refer to American Publications and notice to mariners when they are bringing anything

up to date.

BY THE COURT:

Q In your experience as a mariner have you found it generally true that the country nearest to the waters involved and having the greatest amount of shipping throughout normally as the most current and accurate information on navigational hazards?

A I do. That's why we do instruct our masters that they can always use anything local that they may wish.

Q How long had this vessel been operating in the western hemisphere?

A On this particular charter, she has been on the western hemisphere for most of her life.

Q I gather that many of the other Irish Shipping vessels operate either in the western hemisphere or in the Pacific Ocean?

A Yes.

Q Considering that and considering the what you have just said about the accuracy and currency of reports, why did Irish Shipping Lines use the British Admiralty systems on these vessels rather than American Sailing Directions in American waters?

A Because they are within -- when the ships were

built, most of them were built in the United Kingdom or Europe, and we use the British Admiralty because they are recognized as one of the best hydrographics that they are for chart publications and so forth.

Q Well, I understand why you put them aboard originally. But when the vessels started running for prolonged periods of time to and from American waters, did you give any consideration to shifting to American reports?

A Not changing over completely, but I did give instructions to all vessels and all masters when they were in American waters, Gulf of Mexico and so forth that they had complete authority to purchase charts in that area and they are generally, -- and generally as I stated in the memo to them, that they were generally more up to date with such things as oil rings in that vicinity. They had complete authority to purchase the publications.

Q Can you tell in your home office, in your home office in Ireland, what international publications were kept aboard the IRISH SPRUCE?

A Yes.

Q I would assume that there are certain publications giving the area in which a ship is located at the

time and where you intended to be in the near future. There are certain publications that it is obvious you would want aboard a vessel, others which would be somewhat more discretionary; am I correct?

A Yes, on our vessels we keep a world-wide set of publications and charts, as we don't know from charter to charter and voyage to voyage where the vessels might be going.

Q Why when they put out a new pilot for the very area in which the ship is operating do you not automatically purchase it and send it to the vessel?

A Because we have a system whereby that we don't do the purchasing until we send out the notice to mariners to the ship and we leave it to the master and to the officers on board to make the requisition for their requirement. They could have already purchased that out there even without sending in this requisition to us.

Q Well, I would think they couldn't purchase it until they knew about it, and they couldn't know it until they got the notice to mariners; am I correct?

A Yes.

Q If when you got the notice to mariners in Ireland you immediately purchased say the new pilot

for the Caribbean area, you could indicate in sending the notice to mariners out that this new revised issue was on its way, could you not? In fact, it should arrive as rapidly as the notice to mariners?

A I wouldn't agree with you, your Honor, because these publications, it does take a few weeks for them to even get to the chart agent after the notice to mariners has been published.

Q There could be a delay between your knowing about the new pilot and its availability in the stores for purchasing?

A There could be, yes.

Q But I would think the delay would be even longer here in the western hemisphere to which it would have to be shipped by the British Admiralty.

A I agree the delay would be longer, but I would also say that if they on board decided they wanted that urgently, all they have to do is contact us.

Q I understand that. But was there any question in your mind but what this vessel would need, the new pilot, which is Exhibit D?

A Was there any question in my mind?

Q Was it not clear to you that Exhibit D was a

navigational publication that the vessel, considering where she was operating, would have to have?

A Yes.

Q And did not this system of sending out a notice to mariners, then allowing the vessel to put in a requisition delay by a couple of months the receipt of that Exhibit D, the new pilot aboard the vessel?

A It did.

Q And during that couple of months, the vessel ran aground?

A It did.

Q Now, this is the key question: You think about it carefully. If you had been navigating this vessel on the evening in question and under the circumstances you know to exist, if you had had before you at that time the new pilot, Exhibit D with its caution about the currents to the east of Quita Sueno Bank, would you have changed your course accordingly?

A I would say that if I was on board that ship that the caution that was there about currents and so forth at that time wouldn't have affected me any more than the assumption of what I would do with the information that was already with me in the book that

was issued previous to that.

THE COURT: I have no further questions.

RECROSS-EXAMINATION

BY MR. JACOBSEN:

Q Captain, I show you Exhibit F, which is an affidavit of the hydrographer's office in Taunton which states that the 1971 edition of Admiralty List of Radio Signals, Volume 2 was available at Taunton to be issued to mariners from 6 November, 1971, and also the notice to mariners number 44 which has the same information.

Now,doesn't that indicate that indeed the 1971 list of radio signals was available November 6 in Taunton?

THE COURT: Which exhibit number is this?

MR. JACOBSEN: This one is F.

A It says that the -- which book are we referring to?

Q Well, referring to this book.

A Yes, it does. It says that it was available from the 6th of November, 1971.

Q You don't disagree with that?

A I don't.

Q And that's referring to Exhibit E?

A Yes.

Q The 1971 list of radio signals?

A Yes.

MR. JACOBSEN: No further questions.

REDIRECT EXAMINATION

BY MR. BAILLIE:

Q Captain, I wonder as a master mariner what do you understand by that cautionary note in the new Admiralty Pilot?

MR. JACOBSEN: Exhibit D.

A I understand by it that there is a strong current that sets westward onto the bank. That caution should be exercised when passing eastward of Quita Sueno Bank as the current sets strongly on the westward side of the bank.

I understand by that that -- well, that -- you must take into consideration that there are currents in the area and act.

Q How close would you figure to the bank?

A I reckon it would be within a few miles of the bank.

MR. BAILLIE: That's all.

RECROSS-EXAMINATION

BY MR. JACOBSEN:

Q Captain, since this is for mariners of ocean-going vessels, it says passing eastward at Quita Sueno Bank, you are not suggesting that they would be passing within a couple of miles of the bank; are you?

A Well, it all depends on what route they are taking.

Q Don't you think this is warning vessels that are passing out between Quita Sueno and Serrana Bank of any area in there?

A I would think that basically would cover the whole area just like this one here.

MR. JACOBSEN: Thank you.

THE COURT: We will take a brief recess.

(Witness excused.)

(Short recess.)

THE COURT: Call your next witness.

MR. BAILLIE: Captain Auston D. Cushman.

A U S T O N D. C U S H M A N, sworn by the Court.

THE COURT: Please be seated and state your name and address.

THE WITNESS: Auston D. Cushman, Jr., I live at 82 Ocean Boulevard, Atlantic Highlands, New Jersey.

DIRECT EXAMINATION

BY MR. BAILLIE:

Q Captain, you are a master mariner; are you not?

A Yes.

Q Will you tell us what license you have at the moment, who issued it and what your experience has been at sea?

A I have seventh issue of Master's License issued at New York, expires next year. I graduated from the Massachusetts Nautical Academy. I in 196- something attended a six month course at Kings Point University in Reactor Operations for the Savana H project. I later attended a short course in gas turbine propellsion for ships at Pratt and Whitneys school. I have attended various metrological schools, fire-fighting school, radar schools and associated subjects of the industry.

I started with American Export Lines in October, 1929 as a cadet officer, made one voyage, went to third officer, third mate, and went through the various mates' capacities until I think it was December, 1942 I assumed my first command and have sailed as a master mariner from that day until my retirement with the exceptio

of one year and eight months when I was director of operations for the company for the Calcutta-Pakistan-Burma and Ceylon area and another period when I was ashore for one year and two months as port operations officer for the Savanah project.

I served as master on most of American export's dry cargo ships and master of the passenger liner Atlantic, the Nuclear power vessel Savanah and the gas turbine powered roll-on-roll offship Admiral William M. Calahan. December, 1972 I reached retirement, compulsory retirement age, and in January, '73, I was elected president of the New York Chapter of the Council of American Master Mariners in which capacity I still serve.

That brings me up to date.

Q During your active career did you sail at any time as master through the waters of the Caribbean?

A I did, sir.

Q When was that?

A During the war on my first command I was master of the vessel New Orleans and I ran for a period of about two years between New Orleans and the Panama Canal for the army carrying live ammunition to the Canal and bring old ammunition back to New Orleans from

the Canal.

Q Captain, I asked you assume that the vessel called the IRISH SPRUCE, a dry cargo vessel of 7,875 gross and 4,555 net tonage built in 1957, steam turbine driven, 6200 shaft power, equipped with such aids to navigation as a gyro, magnetic compasses, a fathometer, a radar newly installed in June of 1971, a radio direction finder, a Decca Navigator, and has a board a West Indies Pilot Volume 1, 11th Edition, 1956 with supplement number 6, 1968, issued by the British Admiralty, the Admiralty List of Radio Signals volume 2, 1969, and assortment of some 50 or 60 of pilot charts of the North Atlantic issued by the United States Oceanographic Office including those for the months of January and February, 1970 and January, November and December, 1971, British Admiralty Chart Number 762 of the West Indies Islands and Caribbean Sea issued 1966 and corrected through corrections number 1385, 1971, British Admiralty Chart 1300, Approaches to the Panama Canal issued 1958, corrected through correction 1248, 1971, British Admiralty chart 396, Cabo Lavela to Chagres, issued 1956 and corrected through correction 1248, 1971, British Admiralty Chart 1218, West Indies from San Juan de Nicaragua to Cape Gracias, issued

1932 with corrections through correction number 264 in 1971; assume further that the vessel is enroute from Peruvian Ports to New Orleans, she transits the Panama Canal on the 25th of January,1972 and at 0154 hours on the 26th she passes the breakwater head off Cristobal with all navigational equipment in operating order.

27 Assume the vessel is loaded with concentrates and general cargo to a draft of 26 feet 4 inches forward and 28 feet 11 inches aft leaving the Canal. A course of 357 true is projected; this course is designed to take the vessel approximately 11 to 12 miles southwest of Roncador Light, if made good. She starts out at normal sea speed which will produce under ideal conditions a maximum of 16 knots.

Assume further the vessel meets heavy seas with a northeast wind of force 6 and 7 and to ease the heavy rolling of the ship her speed is reduced at 0330 hours to 90 rpm. At 0334 speed was reduced to maneuverin full speed and at 0359 to 75 rpm. At 0422 hours the course is changed to 021 degrees true to ease the rolling At 1200 hours on the 26th the vessel's position was fixed by sunline advanced from a 1000 hour observation and the vessel's navigator considered that the position so obtained was reasonably accurate. At 1247 hours

the course was changed to 0102, the wind was then from the north-northeast at force 6.

At 1558 hours the course was changed to 330 degrees true. The position of the change of course was fixed by dead reckoning using the speed of 10 to 11 knots for the distance covered from the 1200 hour fix. The course of 330 degrees was designed to take the vessel approximately 11 miles from Roncador Light with the light bearing 024 degrees from the vessel. Full speed having resumed, the position was expected to be reached at about 2300 hours on the 26th.

Assume an effort was made by the officer on the 1600 to 2000 hundred hours watch to obtain a star fix but a rain squall and a hazy horizon prevented this. Assume that the light on Roncador Bank was not observed at 2300 hours or at any time either visually or by radar with the radar being shown subsequently to be functioning well.

At 2400 hours the course is changed to 323 degrees true, full sea speed being continuous. The wind continued generally from the northeast at force 4 to 5. At 0230 hours an indication on the radar was picked up bearing on the starboard bow 337

and one half degrees at 15.9 miles. Observation of the object was continued by radar until 0329 hours when it bore 034 degrees relative at 4.1 miles.

At approximately that time the fathometer indicated shallow water and the ship went hard aground on Quita Sueno Bank at 0329 and a half hours on January 27, 1972.

Given these facts and having reviewed the various exhibits mentioned, do you have an opinion as to the cause of the vessel's grounding on Quita Sueno Bank?

A Yes, sir, I do.

MR. JACOBSEN: Objection unless we know the exhibits.

MR. BAILLIE: They are all in evidence.

MR. JACOBSEN: The charts?

MR. BAILLIE: All the charts are in evidence, all logs.

MR. JACOBSEN: Statements?

MR. BAILLIE: I haven't based it on statements.

MR. JACOBSEN: By statement I mean Captain Kerr's statement.

Q You have read all the depositions; have you not?

A Yes, sir, I have.

MR. BAILLIE: We will include all the depositions.

MR. JACOBSEN: Did he read all of the depositions?

THE WITNESS: I read Captain Kerr's deposition. I read the chief officer's deposition, second officer's, third officer's, the cadet officer I presume they call him, I think that's it.

Q Those are all the ones that testified?

A I think those were all the ones that I read.

Q Now, do you have an opinion?

THE COURT: It is not clear to me whether the exhibits that he reviewed in addition to the depositions are merely those to which you specifically referred in your hypothetical question or whether he reviewed all of your exhibits?

MR. BAILLIE: I think his opinion is based on merely the exhibits I specifically referred to him.

THE COURT: Plus the depositions he has just mentioned?

MR. BAILLIE: Yes.

THE COURT: All right.

Q Now, will you state what your opinion is and why?

A I think, sir, that the master did not show prudence at 2400 hours. I think this is where he made his mistake.

28 I think at 2400 hours having proceeded from noon in various bad weather conditions, according to the log book, with no further sights, having expected to see a light with his best dead reckoning at 11 p. m. not having seen it, preceding one hour beyond that I think he had reached the limits of prudent navigation. I think he should at that point have stopped his ship and waited until daylight when he could presumably get a star fix or proceed cautiously from then on when he would be able to see reefs. There is one other possibility that he could have considered earlier in view of the fact that the vessel was equipped with a good operating radar. I think he could have very wisely proceeded west of Providence, which is an excellent radar target, and then proceeded northward, as the information is set forth in the book that he had on board at the time. I think that would have been a very prudent move also.

THE COURT: Captain, can you show me on the chart where Providence is?

THE WITNESS: Yes, this is Old Providence. It is Old Providence Island. It is now called on the new chart Providencia. But it shows it at 1190 feet high and it is quite mountainous.

Also, prior to getting there he probably would have had radar return from San Andres, which has a high spot of some 340 feet, San Andres being San Andres Island which you have been talking about.

Q Captain, I read as a fact to you that a course of 357 was projected from Cristobal. Have you any comments to make about that?

A The course looks like a viable course, looks like a very good course to me. If he had made up his mind to go in this particular right.

Q Does it take into consideration the possible currents in the area?

A I would say that this course, as projected, the 357 course has taken into the -- into mind the strong currents that might be experienced in the vicinity of Quita Sueno Bank, as you can see by stepping off a distance from that line to the north extremity where the lean is on Quita Sueno, he could

expect to pass about 28 miles off. I would say that was exerting exceeding caution, good caution.

Q Are you aware of the currents in that area? Have you experienced them yourself?

A We -- I ran there for two years and I cannot recall that I ever experienced any extreme currents that were beyond those set forth in the general current charts or on my U. S. Pilot charts. However, as I say, I have always gone west of Providenc when I was master of the ship, go west of Providence and also west of Quita Sueno.

Q Have you any opinion as to whe on the course of this voyage north to her rendezvous with Quita Sueno Bank this current, the general current would have been felt?

A It is my opinion that this is not totally due to currents. I feel that the likelihood of a certain error is the noon fix. Normally speaking, an experienced mariner figured that his noon fix under good conditions, normal conditions, encompasses a circle two miles from the center of that position so determined which means an area with a four-mile diameter. And under the conditions they had that day with the ship pitching, rolling, presumably the

navigating officer could have had some trouble putting the sun on the horizon and observing the dip of the sun, which is the way a good navigator will make sure that he has a good noon fix, and running up if his speed was a little out, and I feel that the dead reckoning itself, the speed as calculated itself had a great deal to do with their being as far west of their course as was finally indicated.

I personally do not feel this is all current per se.

Q Do you have any opinion as to the efficacy of a running fix based upon a single line of bearing from a ~~narrow~~ AERO radiobeacon?

A It is impossible to get a running fix from a single line or two single lines. A running determined by two single lines is dependent on several factors, particularly on an RDF bearing, it is dependent on the distance from the station, the quality of the signal you receive, the expertise of the man handling the equipment and taking the bearing, and then of course if you do get bearings that you consider good enough to plot as satisfactory that you will use with some confidence, then you must have a reasonable closeness to your actual speed to have

any degree of accuracy in this fix. In other words, the fix will vary depending on the difference between your actual speed and that which you have dead reckoning.

Q How about atmospheric conditions?

A The atmospheric conditions of course will influence the quality of the signal you receive.

Q How about the rolling of the vessel?

A The rolling of the vessel will also in many cases have a lot to do with it. Sometimes the vessel is rolling excessively, you lose the signal completely during a portion of the roll, and it will come back, it would be very hard to determine which is the null and when you have just plain signals because I mean after all a null is no signal. And if you lose the signal through the roll, and determine that to be your null, you could be a way out in your bearing.

Q Would you as a master mariner rely on such a fix for your navigation purposes?

A From my experience at comparable distance from this particular beacon we are discussing, and at night, but with the vessel not rolling, I certainly would consider it an effort in futility to use those

bearings that I took, and I presume that had they taken them that night they would have had even more difficulty because they were rolling heavily according to the logs.

MR. BAILLIE: No further questions.

29 CROSS-EXAMINATION

BY MR. JACOBSEN:

Q Captain, you mentioned the speed, DR speed.

A Yes, sir.

Q Were you aware that Mr. Healy used a DR speed of 14 knots and that this was borne out by the actual plot?

A Yes, I realize he used that speed.

Q So that DR speed was accurate?

A The overall DR speed -- he changed his DR speed several times, if you follow me.

Q Because of conditions?

A Right. And at the point where he began using 14 knots, I think they were already well south, or south or west, rather, of the actual position, where they started -- I think they had their heaviest weather when they were on the northerly heading. And this is the type of weather where the ship would be doing pitching.

Q But I think you mentioned being westerly and that is set. What I am referring to is the speed made good. Up to the time of the casualty, the stranding, isn't it true that the plot did work out that the DR speed was correct?

A As far as the speed went.

Q That's what I am referring to.

A On the 14th knot leg, I will agree with that. I think that up to that point is where the error was.

Q With respect to projected track east of Quita Sueno Bank and west of Serrana Bank, take the early route out, you are aware that the 1970 pilot, Exhibit D, does recommend that route or are you?

A Which pilot is that, sir?

Q That's the one I have in my hand.

A Is that the one they had on the ship?

Q No.

A The newest one I know does recommend east of Quita Sueno.

Q By the "newest one" you are referring to the 1970 one, Exhibit D?

A Yes.

Q Also referring to Exhibit G, which is the

U. S. Sailing Directions, change 12, up through change 11 and 12, that in the U. S. Sailing Directions the route given, there is two routes given, the first one given is westward of Isla de Providencia, which you seem to favor, and then the alternate route is again east of Quita Sueno Bank.

A Yes.

Q And then there is an additional note on there that the vessels -- this is the one east of Quita Sueno Bank.-- the vessels use this route to avoid as much as possible the dangers that lie on Miskito Bank.

A Yes.

Q Would you agree that there are some dangers over that along Miskito Bank?

A Yes, there is some dangers there. This again is my own opinion. I think that after all these years of recommending west of Providence that they have changed this, they have to have some reason why they would change. Over all these years that ships are now becoming very large, very deep drafts and the more moderate ships that could proceed over Miskito Bank with a modicum of danger, but with not too much for the big ships, the danger would be in-

creased because there are very limited drafts over this bank.

THE COURT: Will you point out Miskito Bank, please?

THE WITNESS: This area here.

THE COURT: Exactly where?

THE WITNESS: This entire area would be Miskito.

THE COURT: Thank you.

Q Now, did you ever go up east of Quita Sueno Bank yourself?

A I came down from New Orleans on an Irish Shipping Company ship east of Quita Sueno Bank.

Q When was that?

A That was in October last, sir.

Q 1973?

A Yes, sir.

Q And you went east of Quita Sueno Bank?

A Yes.

Q And west of Serrana Bank?

A Yes.

Q So that Irish Shipping Ships apparently are still going through there between Quita Sueno and Serrana?

A Yes.

Q Now, there was mention of Roncador Bank and the vessel going by Roncador and not picking up Roncador either visually or by radar.

However, that's a relatively weak light for picking up visually; is it?

A If there is any rain between you and the light, it certainly would obliviate the light, yes.

Q It is only an 11 mile light on a 52 foot tower?

A Yes.

Q And with respect to radar, if you refer to the Exhibit D, the British Pilot, or to the light list, you will see that it is a pyramidal framework tower, both on Roncador and Serrana.

A Yes, sir.

Q They are not solid; are they?

A No, they are pyramidal targets.

Q So that you can't necessarily rely on getting a radar signal back from those pyramidal framework towers?

A I would say.

Q There is a limited range?

A I would say not over. I couldn't rely on

it over five or six miles. You might conceivably if you have a very discriminate radar well tuned, first class operator, you may get up to 8 or 9 miles. I would say five or seven would be a maximum figure.

Q You were mentioning RDF. Have you used the aero radiobeacons?

A Oh, yes, sir.

Q And do you use them the same way you use the marine radiobeacons?

A I have used them when I had to. I don't use them from choice. You use them when there are no marine radiobeacons to use in the place where you need them.

Q You have used the aero radiobeacons?

A Yes.

Q As a matter of fact, there are mostly aero radiobeacons in the Caribbean; aren't there?

A Yes, they are.

Q The projected course by Captain Kerr north to begin with before the heavy weather was I believe 357?

A Yes, sir.

Q That compares favorably, does it not, with the new recommendation in the 1970 British Pilot,

Exhibit D, which I believe says 352?

A Yes, sir, I think that --

THE COURT: 352 until where?

Q "Vessel bound for Yucatan Channel should make good a course of 352 degrees to pass 15 miles westward of Banco Serrana Light."

Then going to Exhibit 6, which is the chart in use, number 1218; do you have that up there?

30 Captain Kerr having come up on 3330 true passed Roncador and then changing at midnight, as Mr. Baillie indicated to you, to 323, his projected track did take him to the eastward near Roncador; did it not?

A Yes, sir.

Q And also somewhat near Serrana Bank and the light on the southwest corner at Serrana as compared to this long southern extremity of Quita Sueno Bank which stretches to the south about 25 miles from the light on the very north trip; is that correct?

A Yes.

Q So that as Captain Kerr approached from the south-southeast, he did give a wide berth with his

projected track to this southern area of Quita Sueno Bank and the course was shaped up such as it picked up the lights on the north end of Quita Sueno Bank.

A Yes, sir.

Q That line on Quita Sueno is also 11 miles; isn't it?

A Yes, sir.

Q I gather that it is a solid target. Do you gather that?

A I believe it is the same kind of a light. I think it is a framework structure, sir. I may be wrong. I haven't looked in the light list.

Q I don't think it shows a framework. I think it shows unlike Roncador and Serrana, which says pyramidal framework tower, that Quita Sueno says something different. Referring to Exhibit D; the 1970 pilot, I believe it says a white tower with a black lantern on a tank; is that correct?

A Let me get the thing to make sure now. This is what it says in the book, sir. I would like to see it in the light list if possible to doublecheck it, if we have one.

Q Here is the exhibit L, the 1971 light list.

A Thank you, sir. It says the same thing

in the light list. I would say that the construction of it is then different.

Q Solid?

A Solid tower, yes. The target is much better.

Q Referring to Exhibit G, which is the U.S. Sailing Directions, and change 12 for Quita Sueno Bank, it indicates that the light structure is equipped with a radar reflector, does it not? It is at the bottom there.

A Yes, sir, it does indicate that.

Q So that if that was so, Captain Kerr's projected track would put him in a good position to pick up that as a radar target?

A Yes.

Q Or as a solid tower?

A Yes, it would. I would estimate a target of that distinction could be picked up in the normal -- under normal consideration with a good radar at something in excess of 12 or 15 miles.

Q Now, going back to this aero radiobeacon at Isla San Andres, if you were proceeding northerly on a projected track between Serrana and Quita Sueno Bank, and you knew that aero radiobeacon was there, would you attempt to use it?

A I certainly would not ignore it. I would use it with the cautions that I have stipulated before, sir, yes, sir.

Q When we talked about running fixes, Mr. Baillie did with you, there is no reason why the technique of a running fix cannot be used with a series of radiobeacon bearings?

A No, all you need is lines of position from a known object.

THE COURT: Am I correct that St. Andrews and San Andres are the same thing?

MR. JACOBSEN: Absolutely. The British refer to it as Isla San Andres.

THE COURT: It appears on this chart as St. Andrew Island.

THE WITNESS: That was the British name.

MR. JACOBSEN: It is in the light list of radio signals as Isla San Andres.

THE WITNESS: The British administered the Island for many years.

Q Isla San Andres?

A San Andres and Providence. Those were all --

Q How recently were they British?

A I think I may have a history if you would

like me to.

Q Do you remember the approximate year?

A I couldn't say. I guess from what I read I'd say some 20 years ago possibly.

Q As far as noon fixes go, they depend on the quality of the sun line that is crossed up, dependent on the quality of the sun line that is run up and crossed with the local apparent noon?

A For noon fix, yes.

Q And if there is a good horizon with a competent navigator he could have a good noon fix?

A He should have, yes, with a ship not moving too violently. With a ship pitching and rolling violently and in strong winds, you must remember the one who is out there with a sextant, his hand is moving at the same time if the ship is pitching and rolling and the horizon becomes a little unstable.

Q But that again depends on whether he can hide around the corner out of the wind, too?

A To a certain extent, yes.

Q Have you ever experienced a very severe westward set going past Quita Sueno Bank and Serrana Bank north and south of there?

A On the old courses I used to take, we were always west.

You mean when we came down?

Q Yes.

A This is the only voyage that I actually made to Quita Sueno was on the Irish ~~Helm~~ ELM in October. From the time that vessel left New Orleans until six o'clock in the morning after we had -- when they had a star fix after we had considered Quita Sueno Bank and we were south of the group, the vessel continuously set to the eastward. They were correcting continuously for a vessel setting to the east. And this against current advice and against a northeast pressure and strong breeze during the day around noon, the height of the day, it would be around force 6 or thereabouts.

Q That ship didn't stop, did it?

31 A That ship kept on going, sir. I was -- frankly, I was ~~advised~~ SURPRISED at the set of the ship to the east. I think I can explain it. But had they allowed for a westerly set, they would have been in trouble.

Q Did you see the light on Quita Sueno Bank on that voyage?

A I don't know, sir.

Q That was from the north; wasn't it?

A Yes, sir, I had no occasion to look for lighthouses. I was up there every couple of hours taking bearings on the RDF and I had nothing to do with the actual navigation of the vessel. I was merely taking --

Q Did you take Isla San Andres?

A Yes, I did all night long about every two hours. And an interesting thing about it --

OBJECTIONS TO ADM.

MR. BAILLIE: May I interrupt at this point. I think this testimony and the admissibility of it will depend whether or not your Honor accepts the depositions of the other captains.

I had planned to call Captain Cushman if that is admitted.

THE COURT: Will the testimony of the other captains be about actual use of San Andres and the ranges at which they were able to --

MR. BAILLIE: Yes.

THE COURT: Why don't we take the testimony now subject to it being stricken in the event that the other testimony is not allowed.

MR. BAILLIE: It is about 10 minutes to five.

MR. JACBOSEN: Then on that point I see no reason why the evidence isn't admissible. The only possible question goes as to weight.

THE COURT: Possibly is admissible since he has already given testimony that while he would have attempted to use San Andres beacon he wouldn't have expected to have gotten much from it. So I suppose his actual experiences, even though they were subsequent, probably bear on that opinion already given.

I will allow you to answer that question.

Do you recall the question?

THE COURT: Might I hear the question again, sir?

THE COURT: Please read the question.

(Record read)

THE COURT: I will sustain the objection to the addition because it isn't responsive.

Ask him a new question.

Q Did you take bearings of Isla San Andres both day and night?

A I started in daylight hours and continued until daylight hours, yes, sir. It was all night long, sir.

Q Where was the ship during that period?

A The ship?

Q Where was it when you began and where was it when you finished?

A Can I refer to a chart?

Q Yes.

A I took my first bearing at 1410 ship's time on Sunday, October 14 from a position 1455 north and 8049 west.

Q Where is that?

A Approximate distance was 150 miles from San Andres and the mean average bearing was 205 degrees to San Andres.

THE COURT: What was your longitude at the time?

THE WITNESS: 8049.

THE COURT: Reasonably close to the Quita Sueno Light?

THE WITNESS Yes, sir.

THE COURT: All right.

Q Did you see Quita Sueno visually?

A I did not see it, sir. Whether the ship did, I don't know.

I'd have to refer to the log book. I don't know.

Q Did you compare any results you got by RDF with whatever the ship was doing?

A No, sir. To my knowledge and fr-m what I saw on their charts, all I saw was dead reckoning positions along their chart.

Q You couldn't tell from their chart -- did you look at their charts?

A I just glanced at their chart, yes, sir.

Q Can you tell whether there were from looking at their charts, whether there were any radar fixes or evening stars?

A I did not look that closely, sir.

Q Have you got a diagram there?

A I have a chart showing the course coming down where I started to take my bearings at 1410 and dead reckoning position along it and this is their 6 o'clock star fix.

Q Next morning?

A Yes, sir. And that again, as you will see, was to the eastward.

Q How did they get their bearings, celestial?

A Stars.

Q What is this here, this is the DR?

A This is a DR, and I tried to get some lines

to fall in there, but I had to do a lot of fooling around with it to do it. I couldn't get any figures there at all.

Q Did you use a running fix?

A Yes, I used several running fixes. I put here which means I took -- by taking approximately a two hour run I got -- or rather 17 -- you do 22 -- it would be close to 204 -- a 4 hour run. I wind up here. By taking this first bearing, the 1754 bearing, and running it up with a 1954 bearing, it put me way down here.

(Indicating)

THE COURT: Will you turn the chart around so I can see.

THE WITNESS: Yes, sir.

You have to realize all these bearings, these are mean bearings of a rather large arc of minimum signal. Some of them up to 30 degrees but I just put them down to see how unreliable it would be for the master or anyone to put reliance into them under the conditions we had.

By taking a four hour running fix, take a 1754 line and running up to 2206, it wasn't excessively off the course line.

THE COURT: Where did you get your first line?

THE WITNESS: At 1754 is the first one I used.

THE COURT: Show me that in the chart.

THE WITNESS: 1754 was up here, yes, sir. This was the 1754 DR and this is my 1754 line.

MR. BAILLIE: You want to mark these?

THE COURT: Put something next to it so we know what we are talkingabout.

Do it in pen. Put an X next to the 1754, the first line you took, and put a Y next to the DR for that time.

32 THE WITNESS: A Y next to the DR for that time.

(Witness complies.)

That was the first line that I used.

Now, I used this line again in two different situations. I used it in a two hour run and here again it is in the four hour run.

THE COURT: Just concentrate on lines of position, the first line of position, put an X on it and show me where --

THE WITNESS: 1954 line is?

THE COURT: No, I want the dead reckoning position at that time. Would you put a Y next to that.

Q This was going south of course?

A Yes, sir.

Q Did you do that going north?

A No, sir, only headed south.

Q You came back from the Canal Zone or something?

A No, I went back to the Island and flew back from the Island.

Q Which Island was that?

A San Andres.

Q If you were going north past Quita Sueno Bank, going north past Isla San Andres, there has been talk about an angle. As you get closer to Quita Sueno Bank going northerly, and using a DR speed particularly if the DR speed is good, the combination of the two will really give you a good danger angle; would it not?

A Yes, sir, if you were getting a good signal from San Andres, it certainly would.

Q How far away did you pick up a signal from San Andres?

A I audibly picked up my first signal at 1410

ship's time, which was approximately 150 miles from the station.

Q Did you try before that?

A No, sir, I did not try before that.

Q And how far south did you continue to try?

A Well, this is the thing. We tried -- I tried until 9 a. m. and 606 was the last audible signal we got from it. At 8 o'clock it was silence. I had the ship's officers, asked them and the radio officer to listen, and we had no further -- I thought here we had no further signals occurred from SPP until the elm was approaching canal entrance.

Q How far south, how far were you away when you got the last signal?

A At 606 I was approximately 91 miles from the island, sir.

Q But you got it at 150 miles earlier?

A Yes, sir.

Q And of course 606, was that anywhere around sunrise?

A Yes, very close, because at 6060 we had the star fix. It was twilight period.

Q So you could be at sunrise effect time area?

A Yes.

Q Going back to San Andres, I measure about 100 miles up to where th IRISH SPRUCE fetched up on Quita Sueno Bank. Does that check with you?

A From --

Q From the light at San Adnres.

A Yes, that's reasonably close. I say it might be 104 or 5, something like that.

Q There was the elm you are talking about?

A Yes.

Q Was that a Lodestone RDF?

A It was a Marconi, sir.

Q Do you know whether it was Lodestone or any other particular model?

A I may have -- I don't know if I put that notation down. I am not much of an artist. I made a sketch of what was on the -- all I have here is an RDF Marconi marked on my -- I just laid out the bridge as I saw it there. It did have the automatic features which I did not use. I used it only manually. It was a fairly new model.

MR. JACOBSEN: Your Honor, I notice it is almost five o'clock. Are we going to continue?

THE COURT: It depends upon how long you expect to take to complete this.

MR. JACOBSEN: I would like to look at this chart, if I may.

THE COURT: All right, we will not complete the witness tonight. However, I want to ask him two questions before I forget them. I have a poor memory.

BY THE COURT:

Q Captain, we were discussing earlier the preferred general course north from Cristobal and you said you have a preference to the course which passes through the westward of Old Providence and then up between Miskito East and Quita Sueno; is that correct?

A At that time, sir, I was under naval orders. I had no choice.

I must say that I ran this area for a period of two years and had no trouble and naturally I have developed a preference for it.

Q It seems to me that the safest route, however, would be neither that route nor the route suggested in the sailing directions, but rather to steer a degree or two east of north passing say 30 or 40 miles to the ~~west~~ East of Rancador and not changing to the northwest until you are up around latitude 15. Doesn't that look considerably safer to you?

A I would say yes, it certainly does. It is

clear of all dangers up to this point and minimizes it here. However, here again I would find it very desirable to be on the vessel that had Loran equipment. You can't depend on celestial fixtures on these waters many times. You got a lot of squalls and a lot -- even in normally good weather. There seems to be a lot of squalls in that area.

Q However, you got a wide margin for error on this route; you can be off nearly 40, 50 miles before you are in trouble.

A That's true.

Q Going back to your opinion that it was not prudent navigation to continue on after the failure to pick up Roncador light at 2400, you suggested two possibilities, one of them being to turn to the west and hope to pick up Old Providence on the radar.

A Yes.

Q Now, that of course is on the basis of hindsight that the vessel in fact had been set to the west by currents.

Suppose the reason they failed to pick up Roncador Light is because they were an equal distance to the east of it, which is to say over here in longitude 7940. If the vessel were to turn and head to the

west instead of picking up Old Providence, it could have run itself up onto the Ranconcamo Reef.

33 A I said he had two alternatives. The first and most obvious being to stop at 2400.

Q I remember that.

A And then I said he could have gone westward of Providence and I didn't mean at that point.

(Indicating)

Q You mean originally?

A Yes.

Q Your other suggestion, then, taken the position he was in at midnight, the only suggestion you had is that he laid ~~until the water~~ LAY TO until daylight?

A Yes, I consider it a good one.

Q If in fact his navigational problems were caused by heavy currents, couldn't you have anticipated being taken another 20, 30 miles to the west before daylight?

A It would have to be a very strong current. It was a loaded vessel. So the wind and sea wouldn't have that much effect on him when he was lying dead.

If he were getting something in the neighborhood of 5 knots of current, that is possible but he does have radar and a sounding machine and I think that

with his radar had he set farther to the westward he probably would have got some return from whatever happens to be there in that area where he was stopped.

Q I think the earlier witnesses have agreed that the fathometer was relatively valueless since all of the hazards in this area, come up pretty sharply.

A Particularly when you are making full speed. But when you are stopped and you come on soundings, I think then you can take a little evasive action with the pilot, with the hope and probability of going clear.

Q How often during your career as a master did you have occasion to stop a vessel on the high seas and simply lie dead in the water for as much as seven hours because you had questions in your mind about your navigational position?

A Sir, I have stopped my ship on three occasions, that I can readily think of, in the Red Sea for no other reason than heavy sand haze and I couldn't see.

Q For as much as seven hours?

A I stayed all night. I have stayed all night because they were they days before radar. We had no electronic equipment other than the RDF and the Red Sea is devoid of any RDF stations at the time I was running out there.

Q Subsequent to the introduction of radar have you ever had occasion to lie dead in the water for as long as seven hours waiting to get a daytime fix?

A Subsequent?

Q Yes.

A No, sir. I put a lot of reliance on radar and I think every ship I have been on since I have had radar has had two radar sets on it.

Q Of course, one of the troubles of waiting until the morning was that if you still had bad weather you weren't going to get any star sights at that time either.

A Right. But you would certainly see a reef breaking in time to stay off it.

I can't remember the name of the port, but there was a port that we used to go in there and load phosphates. There is no light going in there. We used to stop many hours and wait for daylight and navigate between the reefs just by visual navigation.

THE COURT: Why don't we suspend for the night and continue with this witness in the morning.

MR. NOVITSKI: The charterers are relying upon the contentions of the owners initially. Also upon the exhibits and testimony they will offer. In

this respect the counsel for the charterers wish to obtain leave of the Court to refrain from attending further proceedings.

THE COURT: Does counsel for either of the other parties have any objection to this?

MR. JACOBSEN: Not as long as Mr. Novitski agrees to be bound by these proceedings.

THE COURT: Obviously he has no option in that regard to be bound by them.

You understand that.

MR NOVITSKI: Yes, we are trying to save a few dollars.

THE COURT: No one objecting, you will be allowed to cease your attendance.

We will resume tomorrow morning at 10 a. m.

(Time noted-5 P. M.)

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hcds 1

In the Matter of the
Complaint of Irish Shipping Ltd. 72 Civ. 3199 [MEF]

American Smelting and Refining Company

-against-

Magistrate G.L.Goettel

S.S. IRISH SPRUCE, etc., 72 Civ. 656 [MEF]

-and against-

Irish Shipping Ltd.

New York, New York
April, 25, 1974

THE MAGISTRATE: Capt. Cushman, you are still under oath.

A U S T O N D. C U S H M A N, called as a witness, having previously been sworn by the Magistrate, testified further as follows:

CROSS-EXAMINATION CONTINUED

BY MR. JACOBSEN:

Q There is your chart, Captain. Before getting into that, there was one other thing I wanted to ask from yesterday.

In connection with stopping, if you had a good noon position and there was plausible reasons say for not picking up Roncador Light, weak lights

there, poor radar target and rain squalls, there 200
wouldn't necessarily be a plausible reason to stop;
would there?

A I believe, sir, those very reasons you just mentioned would be the reasoning behind my stopping. The fact that I -- due to the weather conditions I could not or did not see the light, and my vessel was headed on a course wherein there were several dangers ahead of me on both sides of me, I think that my reasoning would be prudent to stop at that point.

Q Did you take into consideration that you feel you had a good noon position?

A Yes, sir. But from noon to midnight is a reasonably long period of time. In that period I believe the course had been changed several times, the speed had been changed, the master had to estimate various speeds over the ground, and so forth, and not having picked up the object which obviously he had planned to see to get a departure point for the course between these dangers. I still say I think that in my judgment it would be prudent to stop.

Q You do agree, don't you, that it is possible not to pickup Roncador Bank say at 10 or 11 miles on the conditions we are talking about?

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A Yes, sir.

Q Mainly the radar signal reflecting ability of that pyramidal framework tower and the strength of that light on Roncador?

A Plus also with the weather there had to be considerable sea return which would blot out the signal where he was reasonably close to it.

Q Referring to the chart before you, Captain, I believe you testified that this is the chart you used when you were on the IRISH ELM. Did you take this chart with you on the IRISH ELM?

A I did not, no, sir.

Q Was it on the IRISH ELM?

A No, I did not.

Q Where did it come from?

A I think this was picked up at one of the local shops in New York.

Q Did you have it with you when you were on the IRISH ELM?

A No, sir, I don't think I did, sir.

Q When did you put those bearings down that you have on there?

A When I got back I think I put them down on my ping-pong table down the cellar.

Q This part was at home?

A Yes, sir, I brought this home with me.

Q This was not the chart that was used to navigate the IRISH ELM?

A No. They never saw this chart.

Q You were on there not as a crew member but strictly as a passenger?

A Strictly as an observer, passenger.

Q When you were on the IRISH ELM, you took some radio bearings of Isla San Andres and you wrote them down or something?

A Yes, I did.

Q The ones that you have on there, would you point those out to us?

A Yes.

Q You put these radio bearings down after you got home?

A Yes, sir, I did.

Q Would this be several weeks later?

A I couldn't tell you exactly how long after. It might have been a week, might have been 10 days after, yes, sir.

Q Just to identify what we are looking at, this is an N.O.2600 chart. Would you write your name

on there somewhere, Captain, so we know which one it is, on the margin.

A Right.

Q Where is the first radio bearing you have here? Is that 1754?

A Let me refer to my books.

The first bearing I took was at 1410, sir. 1410 I got an average bearing of 205 degrees.

Q Would you point this out to me?

A This is probably it. I have to see something. Yes, that's this bearing here.

[Indicating]

Q Is there any identifying time on that?

A I didn't mark any, no, sir. All I did -- it was so far away, I didn't mark any time. I had a dead reckoning I believe at 1410 up here and the bearings also down here.

Q I believe you explained before the ink course, projected course off to the east has nothing to do with the IRISH ELM.

A Nothing to do, no. Neither the ink nor this brown line, nor the red line have anything to do with the IRISH ELM, sir.

Q It is the penciled lines that do have some-

thing to do with the IRISH ELM.

A The pencil line is the course line that the IRISH ELM was using, and I transposed their position of 1410 hours on sun, October 14th to their 0611 fix of Monday, October 15.

Q What information did you use to put this projected course of the IRISH ELM down with the DR times?

A They were using a speed, if I recollect, about twelve and a half knots because they were running at reduced speed and their course was 171 true.

Q So you wrote that down in your notebook; is that it?

A Yes, sir.

Q And then put that on this chart when you got home?

A Yes.

Q Did you put down their fixes?

A The fix I put down -- the only two positions I put down was the 1410 fix.

Q Is that ship's time?

A It is all ship's time, and the 0600 star fix.

Q Is that ship's time, too?

A Yes, that is.

Q Did they change ship's clocks during this

period?

A To the best of my knowledge I couldn't say, sir. I couldn't say really.

Q On your bearings --

A I don't think they did.

Q On your bearings I noticed a Zulu.

A That is not a Zulu. That's what I put for a bearing.

Q But that's supposedly ship's time?

A Yes, sir, this is all ship's time.

Q That bearing you have got up there at the top is 1410?

A Yes, sir.

Q Do you have another one on the chart?

A This is 1754 bearing, 2208 bearing. There are several others. I don't know if I have them all on the chart, sir.

Q Here is 2400; what does that mean?

A This is a fix using the 2206 line of position crossing it with a 2400 RDF bearing. I have identified them in that manner as to which ones I have used. I just took them at random just to try them out.

Q Referring to this 0106 --

A Yes, sir.

Q --fix, you say using 2300 and 0106 RDF bearings, is that it?

A Yes, sir.

Q Where is 2300?

A 2300, well, there is the 2300 DR, the 2300 bearing should be 256.5, sir.

I couldn't find one. I don't think I drew it on there. If I did, I erased it. I might have had it on there. Underneath there there is a faint line. I might have had it on there, then erased it.

Q Well, counting that 1410, which you don't have identified with the time, going down through the 0106 and the 0406, and I guess you had one down here at 06 or not?

A That was a dead reckoning.

Q So that I count 7 bearings --

A No, actually, sir, I took --

Q -- on the chart.

A Possibly, yes. I just took them at random. In my judgment they were useless for navigational purposes, and I just put them down for just to see how they looked.

Q How did you choose which ones to put down and which ones not?

A I just took them at random.

THE MAGISTRATE: Would you show me the bearings taken closest to Roncador.

THE WITNESS: Closes to Roncador?

THE MAGISTRATE: Yes.

THE WITNESS: Let's see. My dead reckoning position closest to Roncador would be -- well, it's a tossup whether it is 1954 or 2206.

THE MAGISTRATE: Where is your line of position at 2206?

THE WITNESS: This is the 2206 line of position here, sir, and bringing the 1754 line down, it crossed here, sir, reasonably close to the course line.

THE MAGISTRATE: Reasonably close to the track but quite a bit ahead of it?

THE WITNESS: Yes, sir.

Q Bring your 1754 down to 0406 and see how that compares.

A 1754 to 0406, yes, sir.

Which was the other one you wanted?

Q 1754.

A I am just doing a little mathematics here, hoping I will get them right.

You said 1754; didn't you?

Q Yes, I did.

What about your 2206?

A 2206 is this.

Q Can you bring this one down?

A Yes.

Q You are taking that from the DR; is that right?

A No, sir, I am advancing the line itself.

Q Okay.

A I am advancing the line.

Q On the DR?

A On the DR track. It wouldn't matter if I put it here. It would still come the same way.

Q Where is your triangle now, you are at 1754?

A This is a 406 running fix using -- what did we say, 2206, and 0406.

Q Where is the 1754? And your 406. Did you find your triangle yet?

A I think it is here. This is the 406 if I am not mistaken.

Q That's the 406 line?

A Yes.

Q And then you ran up the 1754 line, which is which one?

A I believe it is this one, sir.

Q That one?

A Yes.

Q And then the 2206 line?

A 2206 line up here, yes, sir.

Q So you have got a triangle here; is that right?

A Yes, sir. Yes, there would be the triangle. In what respect do you mean? You have a couple of triangles.

Q You have got three sides, you got the 0406; right?

A Yes.

Q You got the 1754?

A Right.

Q And then you got the other one, 22, using all three of them?

A Yes.

Q So that your triangle is where, this one?

A This would be your triangle from this double fix.

Q So the middle of the triangle would have you somewhere about there?

A Yes, approximation about here.

Q Which would be a couple of nours before that 6:00 o'clock fix and slightly to the east?

A Yes, sir.

Q Have you compared the ship's DR there with the star fix?

A Yes, sir, I have.

Q How far out was it, about an hour or two?

A I think it was closer than that, if I am not mistaken; 0600 DR and the 0600 fix. This is 10 miles and of course this would have to be advanced 1 mile, so say 11 miles, sir.

Q What about farther up, that was figured on what, twelve and a half miles?

A I think twelve and a half.

Q Going back from 600 up to midnight, see how that compares.

A From 600 to midnight, yes, sir, just under 12.3.

Q Going back from 600 stars to midnight.

Have you used Marconi before?

A No, sir.

Q Did you use any instruction booklets

A I looked at the instruction booklets, sir, because I was not familiar with the dials per se

or the thing till -- 211

Q Did the officers on the ship help you or did you do this yourself?

A No, sir, I did this completely myself. I figured that was the way it should be done.

Q What did you say yesterday about the nulls, what was the size of some of the nulls?

A I have them in the book.

You want me to read them?

At 1400 hours at a distance of about 150 miles my arc of minimum signals, which is the arc of the null, was extended from 200 to 200 and 10 degrees.

Q Null of 10 degrees?

A Yes. The next one, 1615 was from 210 to 218 of 8 degree null. At 1754 I had a null from 217 to 223 of 6 degree.

At 1954 I had a null from 250 to 295, which is about 35 degrees.

Q 35 degree null?

A Sorry, 65 degrees. At --

Q So how much null would that be?

A 65 degrees, sir.

THE MAGISTRATE: Was that during the sunset hours?

THE WITNESS: Very close to it, yes, sir. Yes, sir. In fact, I wrote one slide of this particular bearing, "Complete static blanket."

At 2206 I had a null from 240 to 270, 30 degrees, sir.

At 2300 I had a null from 245 to 270, 25 degree null.

At 2400 I had a null from 260 to 270, about 12 degreet, sir.

At 0106 I had a null from 275 to 295, about 20 degrees.

At 0206 I had a null from 290 to 310. That's 20 degrees.

At 0406 I had a null from 280 to 305, a null of about 25 degrees.

At 0606 I got my first sharp null at 307, with no --

Q This is at sunrise about?

A I believe it must have been close to star time, yes, sir.

Q Did you turn this set on or did they set it up for you?

A I would turn the set on when I get up there.

Q And go through the routine of tuning?

A Well, actually after the first tuning, I merely adjusted it to see if I got a better signal.

Q This equipment that was on the ELM, did that have a filter selectivity switch; do you know?

A I couldn't tell you at this point.

Q Do you know whether it had a zero sharpening control?

A I believe it did have a balance.

Q How does that work?

A When you got your signal, when you get a null, then with the adjustment, careful adjustment of this, you can fine tune it to the smallest arc of null and if you tune it closely, why, and conditions are ideal, hopefully you can get it to a complete null at a certain given point.

MR. JACOBSEN: No further questions.

MR. BAILLIE: If your Honor please, since we have now come into this area of taking DF bearings and so on, I would like to have Mr. Koster continue.

REDIRECT EXAMINATION

BY MR. KOSTER:

Q You have testified that you had not previously operated a Marconi RDF. Have you operated other kinds of RDF equipment?

A Yes.

Q Is the operation of such equipment basically the same in principle?

A I found that once I located the corresponding dials on their equipment, I found it to be very similar.

MR. KOSTER: May I ask that this be admitted in evidence.

MR. JACOBSEN: I have no objection, subject to the comments that the Captain has made.

THE MAGISTRATE: What is your feeling about the inked line running into Quita Sueno Bank as to which he has given no testimony?

MR. JACOBSEN: That's one of those comments. I object to that feature of it. I don't object to what the Captain testified to and the chart to date.

THE MAGISTRATE: It will be admitted in evidence to document the purposes for which testimony has been given, but not with respect to other aspects of it.

What number are we up to?

MR. KOSTER: That would be Plaintiff's Exhibit 69, your Honor.

THE MAGISTRATE: Do you have a tab on that as yet?

MR. KOSTER: No, we do not. I don't believe I have any more.

THE MAGISTRATE: We will have the reporter just physically mark it up on its top as Exhibit 69.

xx [Plaintiff's Exhibit 69 received in Evidence]

BY MR. KOSTER:

Q Captain, on cross-examination Mr. Jacobsen referred to a triangle.

A Yes, sir. This is the fix, running fix obtained here from running a 1754 line along the dead reckoning course up to this point and extended it to intercept the 406 line from Isla San Andres and running the 406 line along the ship's course for the appropriate distance here I believe and then running the 406 line up until it intersect a 406 line, and then the extension of the 2206 line and the 1754 line crosses about here, sir.

Q Captain, let me interrupt you a minute. Could you mark the three corners of this triangle with the letters A, B and C, sir?

A Yes.

[Witness complies]

Q Captain, having so labeled the triangle, what's the distance between A and C?

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A Between A and C about 44 miles, sir.

Q I see. And that was the advancement of selective lines of position?

A Yes, sir.

Q Did you at my request advance other lines of position?

A I advanced other lines. I don't believe it was at anybody's request. I think I just did it.

Q There are other lines advanced on there.

A Yes, sir.

Q Do you have those displayed on other charts as well?

A I have some of them on other charts, yes, sir.

Q Would you show those, please.

A Yes, sir.

Q Captain, would you leave your notebook out.

A Yes, certainly. I have here 3 British Admiralty charts entitled West Indies San Juan de Nicaragua to Cape Gracias, Chart No.1218. On this chart I have transposed a portion of the dead reckoning course line on this first chart that I am showing you and I have put a -- I transposed a 2300 dead reckoning position, extended it to the 0600 dead reckoning position and I also show -- I think that should be 0606 DR.

I will have to check that.

No, this is correct. It is the 0600 DR, but this should be that 06 -- let me check.

I am getting all messed up. Let me check. It probably would be the 0606 DR and the 0600 star fix.

Q Captain, this is basically information that's already on Plaintiff's Exhibit 69?

A Yes, sir.

Q It is just isolated?

A This is right. It is a more appropriate scale to look at a particular bearing.

Q Captain, would you just sign your name on the margin of the thing.

A Yes.

[Witness complies]

MR. KOSTER: I ask that this be marked for identification as Plaintiff's Exhibit 70.

xx [Plaintiff's Exhibit 70 marked for Identification]

Q Captain, referring now to Plaintiff's Exhibit 70 for Identification, is there on that chart a 0600 dead reckoning RDF fix and a 0600 star fix?

A There is a 0600 dead reckoning position from -- run up from a 0100 RDF fix and also on there there is

a 0600 star fix.

Q What is the distance between those two?

A Approximately 29 1/2 miles, sir.

Q Captain, would you refer to the second chart you have prepared.

A Yes, sir.

Q Would you tell us what is on that chart.

A On this chart I have transposed again the part of the basic cost line of the vessel. I have indicated a 1754 dead reckoning position, a 1954 dead reckoning position, a 0600 DR and the 0600 star fix, and a couple of RDF bearings, one at 1754 and one at 1954.

Q Captain, referring to the one at 1954, what is that bearing to San Andres?

A About 262 1/2, up 262 1/2.

Q How far away is the 1954 running fix by using the arrow beacon from the 1954 dead reckoning position?

A Approximately 77 miles, sir.

MR. KOSTER: May we have the chart that the Captain has been looking at marked as Plaintiff's Exhibit 71 for identification.

THE MAGISTRATE: So marked.

xx [Plaintff's Exhibit 71 marked for identification] 219

Q Does the information that is now contained on the exhibit identified as Plaintiff's Exhibit 71, that's information that's taken from Plaintiff's Exhibit 69, is it not, as to which you previously testified?

A In essence, yes, sir.

Q Now, would you show me the third chart?

MR. KOSTER: Let me ask that this be marked for identification as Plaintiff's Exhibit 72.

THE MAGISTRATE: It will be so marked.

xx [Plaintiff's Exhibit 72 marked for Identification]

Q What information is contained on the exhibit now identified as Plaintiff's Exhibit 72?

A Here again I have transposed the basic course line and on it I show a 2400 DR, 0206 DR, 0600 DR, along this course line and 0600 star fix position, and 0606 RDF running fix, and also I show a 0206 running fix, a 0600 DR across line running from the 0206 running fix.

Q Captain, the 0600 DR taken from the 0206 RDF running fix, would you measure the distance between

that on the 0600 star fix.

A About 40 1/2 miles, sir.

MR. KOSTER: I offer Exhibits 70, 71 and 72 in evidence.

THE MAGISTRATE: Counsel, we have no shortage of exhibits already, and all of this information is on Exhibit 69.

Do you really feel it is necessary he having given us the measurements to add in effect three additional exhibits which are merely blow-ups of 69?

MR. KOSTER: It makes it a little bit clearer. We might choose to refer to them in the brief.

MR. JACOBSEN: I have no objection.

THE MAGISTRATE: Then they will be received in evidence.

xx [Plaintiff's Exhibits 70, 71 and 72 received in Evidence]

THE MAGISTRATE: The reporter is ready.

BY MR. KOSTER:

Q Captain, did you regard the reac[illegible] you got on the aero beacon from San Andres as being accurate?

A No, sir. I took them to the best of my ability under the conditions and used an average of the arcs which I obtained on any given -- at any given time and

corrected it and used that as my basis for running a line to or from the aero beacon.

Q Did you regard the running fixes that were based on these lines of position as giving you valuable information on which you relied to set a course?

MR. JACOBSEN: Objection. He didn't set a course, as far as I understand, on this ship.

Is this a hypothetical?

MR.KOSTER: Yes, it is.

MR. JACOBSEN: I withdraw the objection.

THE MAGISTRATE: You may answer the question.

A On the basis of the results which I obtained, I would have no faith in those bearings.

Q Captain, on your voyage on the IRISH ELM were there any storms in the area?

A No, sir.

Q So to what do you attribute those inaccuracies of those lines of position?

A After each bearing I noted my observations at the time.

Do you wish me to read them, sir?

Q Yes.

A The first bearing I had "moderate static," and this was at 150 miles.

The second bearing at about 125 miles I marked "increasing static."

The third bearing at 112 miles I marked "heavy static, sun low."

The next bearing, 94 miles distant, I remarked "complete static blanket."

The next bearing at 81 miles I marked "heavy static, full night effect."

The next bearing, 78 miles approximately, I put "average static, full night effect."

At 74 miles I remarked "very heavy static."

At 75 miles I remarked "light static, strong night effect."

At 76 miles I remarked "light static."

At 86 miles I remarked "very light static."

At 91 miles I remarked "very light static."

At 0600 star fix placed this bearing about 5 miles off.

At 0600 I attempted to get another bearing. There was no signal to be heard. There was -- I remarked that, and "very light static."

Q Captain, in your experience you used RDF as an aid to navigation of course; haven't you?

A Many times, yes.

Q When do you find it most helpful?

A In my judgment the optimum conditions in which you find RDF mostly helpful is when you are making, say, for example, Nantucket, Ambrose Light -- I am just using those as examples -- coming from the open sea toward a port wherein there is -- whereat there is a station to guide you into that port and you are coming directly at the bearing.

As you are at a great distance you may find you have an arc of 5, 10, 15 degrees, you average this out, and then you correct it as you advance along; as the signals get better, the bearing gets better, and usually at a distance of something under 50 miles with good conditions you get a bearing with a very small arc, 1 or 2 degrees, and then homing, continuing to home in on it, you can, as you get closer, you can bring this down to a very fine bearing when it is directly on your course line.

MR. KOSTER: Your Honor, can I have just a moment?

THE MAGISTRATE: Yes.

Q Captain, I just want to clarify one thing. You mentioned that on your voyage to the South in the IRISH ELM you experienced current.

A The vessel experienced a set to the east with strong to moderate northeasterly winds and sea and of course the usual currents charts that show a set normally to the north and west, the vessel still on every course and including up to the 0600 star fix did experience a set to the eastward.

MR. KOSTER: I have no further questions.

RECROSS-EXAMINATION

BY MR. JACOBSEN:

Q Captain, referring to your Exhibit 71 there, was that the 1954 bearing that you ran up 71, sir?

A That was the 1754 and 1954, yes, sir.

Q What was the null on your 1754?

A At 1754, sir, I had heavy static, sun low. And in the null -- and the null was about 6 degrees at that time, sir.

Q What was the null on the 1954 bearing?

A The 1954 was the one where I had a null of about 65 degree, sir.

Q 65 degree null?

A Of arc, yes, sir.

Q And how far off was your fix for this bearing with a 65 degree null compared to the DR?

A The 1954 running fix compared with the

1954 DR was approximately 76 1/2 miles off, sir.

MR. JACOBSEN: No further questions.

MR. BAILLIE: If your Honor please, the plaintiff is going to rest.

THE MAGISTRATE: I'd like to ask the Captain a few more questions.

BY THE MAGISTRATE:

Q Captain, you gave as your opinion that the assumed noon position based on sun line advanced line was probably in error and that the vessel was already substantially off its DR at that time.

A This is my opinion, yes, sir.

Q What in your opinion caused the vessel to be off its DR at that point?

A If I am not mistaken, you are referring to the 12:00 o'clock fix?

Q Yes.

A At that time even though the officer taking the fix considered it that he had good, a good fix, I think that his fix was subject to the normal errors induced by the conditions that existed at that time.

Q That's not my question.

I understand your opinion as to why the fix was not reliable.

What I am asking you, the fix ran fairly close to the DR, and you believe that they were not in that area, but I assume further to the westward at that time. What do you think caused the vessel to be off its DR at that time?

A I think that this vessel was probably affected by some current and leeway and ship's motion.

Q Could it have been anything else?

A It conceivably could have been something else, but I don't think it was. These are the things, the conditions that I have used in arriving at that conclusion.

Q Could it have been a gyro error?

A It could also have been a gyro error, yes, sir.

Q Did the vessel have a gyro error that was known at that time?

A This I don't know. Wait, just a moment. I may be confusing the two ships. I have read testimony. If I am not mistaken, I think she did have a 1 degree easterly gyro bearing.

Q Could it have been 1 to 2 degrees?

A Sir?

Q Could it have been a degree and a half?

A It certainly could have.

Q You read the deposition of Capt. Kerr, did you not?

A I did, sir.

Q Would you refer to page 12 of that deposition at the top.

A Yes, sir.

Q Does it indicate that he believed he had a degree and a half of gyro error at that time?

A Yes, sir, because he says one and a half high.

Q Do you know how Capt. Kerr determined that he had a degree and a half of gyro error at that time?

A I presume by taking azimuth or amplitude of the sun.

Q These would checked against the gyro repeaters on the wings?

A Yes, sir.

Q Does it necessarily follow that if you have an error in the gyro repeaters, the same error affects the automatic pilot?

A Now, I don't -- I may not understand your question.

When they setup repeaters in the wings of a vessel, unless they are spotted very accurately in the access of the forward and aft line of the vessel they can

incur a further error in the insulation of these repeaters. But assuming that they were done properly and accurately and any error between the master gyro and the repeaters would be recorded by the ship's officers and checked daily by the ship's officers to assure that the repeater compasses were following proeprly, the master compass, I would assume that they had that under control, sir.

Q My question is: Is it possible to have a deviation between gyro readings in the automatic pilot and those evidenced by the repeaters from which the azimuth are checked?

A It is, sir.

Q Is there not also a problem with correcting gyro errors of occasionally adding when you should subtract the error on the automatic pilot or substracting when you should add?

A Yes, sir, a mistake is possible at anytime by people, yes, sir.

Q Then of course there is the additional problem that either the gyro error has corrected itself so that the correction you are adding or subtracting is unnecessary, and there is the further possibility of additional gyro error occurring after

hcds 30 Cushman -

the azimuth are taken.

A That's true, sir.

Q Do you know if any tests were run on the gyros when she was on the strand to determine the degree of gyro error at that time?

A I do not, sir.

Q Referring, Captain, to Exhibit 69 on which you made your drawings, this one right here, I assume that these lines running across the chart on a tangent are Loran readings?

A Yes, they are.

Q Will you refer to the area of the Quita Sueno Bank and tell me whether -- first, this is a two-station reading, is it not, you have a two-station coverage here?

A Yes, sir. As I read it, it is identified by station 3H1 and 3L2.

Q How was the angle between the two stations, are they giving a fairly good cross coverage.

A The angle is very close to a right angle and a very good angle, yes, sir.

Q If the vessel had been equipment with Loran operating properly at the time of the stranding do you believe that Loran fixes would have given the

position of the vessel accurately?

A Dependant on the distance from the sending station. I have never used Loran in this area, sir, so I am not really qualified to say how good the signals are in this area. But --

Q Are Loran signal coverage better at night than at day?

A Normally yes.

Q With respect to taking the RDF readings that you have described, what sensory function is used in determining the null and limiting the direction of bearing?

Do you understand my question?

A You mean the balance knob?

Q Which of your sensors do you have to use in order to make and RDF fix?

A Which of my sensors?

I use my ears, sir.

Q Are you familiar, Captain, with the fact that as people get older the sensitivity of the their hearing in their auditory nerves decreases?

A In some cases I believe it does.

Q One of the common infirmities of advancing years is poorer hearing.

A Among many other things, yes, sir.

Q Do you have anyone younger and more accurately or more experienced in the use of the Marconi RDF attempting to take RDF readings when you were aboard the IRISH ELM?

A I don't believe there was anybody on the ship more experienced than I. They may have had better hearing, I don't know.

Q How old are you, Captain?

A I am 63 right now, sir.

Q Who aboard the ELM was normally responsible for using its RDF?

A I was not master of the ship, sir. I believe the master would be responsible and he would delegate these duties to his officers on watch. Possibly the radio operator even. I don't know how he ran his operation, sir.

THE MAGISTRATE: I have no further questions.

MR. BAILLIE: Plaintiff rests.

THE MAGISTRATE: You are excused, Captain.

[Witness excused]

MR. JACOBSEN: Capt. Patterson.

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R I C H A R D O. P A T T E R S O N, called as a witness, being first duly sworn by the Magistrate, testified as follows:

THE MAGISTRATE: Please be seated and state your name and address.

THE WITNESS: My name is Richard O. Patterson, I live at 542 Broadway, Dobbs Ferry, New York.

DIRECT EXAMINATION

BY MR. JACOBSEN:

Q Captain, are you a master mariner?

A Yes, sir, I am.

Q What is your marine background, did you go to a nautical school?

A Yes, sir, I did. I graduated from the New York State School in 1923.

Q When did you become a third mate?

A 1924.

Q And you subsequently passed through third mate, second mate, chief mate and master?

A Yes.

Q In general, what was your experience in those capacities?

A After I got my third mate's license, I put several years on various ships in various trade routes.

Later on I was with one of the companies that was -- one of the earlier amalgamations that made the ultimate United States Lines, and I stayed with that company from then on until I retired.

Q When did you retire, Captain?

A Retired in 1971.

Q Going back to United States Lines, can you give us an idea of how many ships you were master of?

A Master of about 12 ships I believe.

Q When did you first become master?

A Well, I was in the Navy during World War II, but the United States Lines classified me officially as a master of the company in 1943.

Q What was your navy experience?

A I was in the Naval Reserve from 1928, active duty with the Navy for 6 years from 1940 to '46, went in lieutenant, came out captain; continued active with the Naval Reserve until I retired in 1965, and for the last 7 years I was a rear admiral of the Naval Reserves.

Q Did you reach upper half rear admiral?

A Yes, I did.

Q Since 1971 have you been active on ships at all?

A Yes, sir, I have. After I retired from the

United States Lines I spent the next 2 years as the trial trip master for the General Dynamics Shipyard at Quincy, Massachusetts.

Q What did that entail?

A Taking new ships out, putting them through the various phases to test them out, making sure they met the specifications.

Q Were these Navy ships or did they include merchant ships also?

A Mostly Navy ships, but also merchant.

Q Did you have occasion to bring the Pilot Association cutter down from the Great Lakes?

A That was my last official activity at sea when I brought the late Pilot cutter from Wisconsin down to New York. That completed 52 years and 2 days at sea.

Q That was in July, 1972?

A That's right.

Q Captain, do you have some experience in the Caribbean?

A Yes, sir, I have.

Q Are you familiar with the British system of nautical publications?

A Yes, I am.

Q What significant pubs do they have in their system?

A Their system is basically on charts. A Pilot which we call sailing directions; radio aids to navigation, they call them radio signals. They are I'd say their light list and tide tables.

Q What is the function of the British Pilot?

A It's a description of the area that it covers of I'd say harbors, ports, routes, islands, channels, currents, prevailing weather, expected weather.

Q How does it compare with the chart, how do you use these?

A You use it in conjunction with the chart because the chart -- the best way to describe it is as a visual layout of the areas that you are traveling through, where the Pilot is a description.

Q How are the British publications corrected?

A Through notice to mariners that are issued weekly, and when there is enough of those have come out to be a little bit overpowering, they come out with a supplement which incorporates all of the previous notices to mariners.

Q Is the system essentially the same as the U.S. system as far as notices to mariners are concerned?

A Yes, sir, it is essentially the same.

Q Where is current information set forth in the British system publications?

A It is in -- it would be found in the Pilots and in addition it will be found very often on charts showing currents along coastlines.

Q The British don't have a Pilot chart showing, a separate Pilot chart showing winds and currents as does the United States; does it?

A No, sir, these do not, not to my knowledge.

Q Is there any other information set forth in Pilot charts other than wind and current?

A Well, on the back of them there is some general information of interest to the mariners.

Q What type of information?

A Oh, quite a wide variety. There would be information on modern navigations systems, marine biology, reports on collision of ships, strandings of ships. There is a series now of information on major canals of the world.

Q Are the Pilot charts used to correct the sailing directions?

A No, sir, never.

Q Are they used for navigation as such?

A No, they are not used for navigation. In fact, there is even a direction right on the upper part of the Pilot charts that they are not to be used for navigation.

Q In the Caribbean can Decca be used?

A No, sir, there are no Decca stations in the Caribbean.

Q Is it possible to use Loran?

A Loran, it is possible, but depending on the area of the Caribbean. The area we are interested in in the southwest, in the light gray section where the signals are very poor at night.

Q Where are the stations, the closest stations?

A Closest stations are over on the American coast around Florida, up and around the Gulf area.

Q Loran is a longer range than Decca; is it not?

A Yes, sir.

Q In the Caribbean if you can't use Decca, you don't have Loran, what aid equipment can you use for navigation there?

A Well, they are limited to just about two, visual navigation and radio direction finder.

Q Have you examined Exhibit 7, which is the 1956 British Pilot?

A Yes, I have.

Q And you have looked at the area for Quita Sueno Bank?

A Yes, sir, I have.

Q Is there anything about current in the vicinity of Quita Sueno Bank written in the area there in the book?

A Not that I have seen, no.

Q Would you check it, please.

A Yes, sir.

THE MAGISTRATE: Exhibit 7 he is looking at?

MR. JACOBSEN: Yes, sir.

MR. BAILLIE: I suggest, your Honor, book speaks for itself.

THE MAGISTRATE: This is about the second or third time we have gone over this. So hopefully it is the last.

MR. JACOBSEN: Yes, your Honor. I know the book speaks for itself, but I have to ask the question.

Q Is there anything there about current, Captain?

A No, sir, there is not.

Q Looking at the chart in use, Exhibit 6, 1218, is there anything about current in the vicinity of Quita Sueno Bank?

A Yes, sir, in addition to the current errors there is an error running across the tip of Quita Sueno Bank, across the north tip, roughly on the northwest direction, but there is no velocity listed to it which would indicate to me there is a little drift.

Q Is there any caution?

A No, no caution there.

Q I show you Exhibit 6. You have examined that, have you -- Exhibit D?

A Yes, sir, I have.

Q That's the 1970 Pilot?

A Yes, sir, that is.

Q Have you examined the caution about current that's contained therein?

A Yes, sir, I have.

Q As a master mariner what is your opinion about the significance of that caution in the 1970 Pilot to the navigator proceeding northward in this area between Serrana Bank and Quita Sueno Bank?

A Well, I would say that it is a very, very strong warning to watch out and keep away from it.

Q What should a navigator do differently, if anything, in light of that warning, as a new warning?

A Well, he would set his course to stay well

away from Quita Sueno Bank and make some allowance for possible westerly set.

Q What aid to navigation, if any, would you use?

A Well, in that particular area the only thing he would have other than his celestial navigation would be his radio direction finder and his echo sounder. That would be all that he could use.

Q Looking at Exhibit 6, Captain, which is the chart in use, and looking at the projected course by Capt. Kerr, based on the 1956 Pilot, which is Exhibit 7, what is your opinion of his projected course?

A Well, I can't find anything wrong with it. He evidently layed his course out to pickup Roncador Bank and further projected his course up to that he could pickup this light on the northern tip of Quita Sueno Bank.

Considering the information available to him, I can't find anything wrong with it, although I might say that every master of a ship going through will not follow exactly the same route. Each man has his own individual taste on it.

Q Now, referring to Exhibit D, which is the 1970 Pilot, which contains that caution about current,

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what is your opinion as to Capt. Kerr's projected track based on this 1970 Pilot?

A Based on the 1970 Pilot?

Q Yes.

A On his projected track he was going to be a little too close to Quita Sueno Bank.

Q What should he have done differently, if anything?

A Well, he should have -- in view of what we have here, you mean in 1970, this caution in mind?

Q That's right, Exhibit D.

A In that case he should have made a course a bit more to the right of his projected track, a little more to the north, and avoid that possibility of a current over by Quita Sueno and try to pickup Serrana Bank Light, because Serrana Bank Light, the light itself is on the extreme southwest tip, and it evidently was planned as a guide for vessels heading to the north, whereas Quita Sueno Bank Light is on the north tip and is evidently designed as a guide for vessels heading south. It would be much better to stay over to the east or northeast.

Might I continue?

Q I was just getting an exhibit out.

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THE MAGISTRATE: We will take a brief recess.

[Short recess]

BY MR. JACOBSEN:

Q Capt. Patterson, referring to the Pilot, did you notice the construction of the lights at Roncador, Serrana and Quita Sueno Bank?

A Yes, I did.

Q What is at Roncador and Serrana?

A It is an open construction type latticework.

MR. BAILLIE: Objection.

MR. JACOBSEN: I will withdraw the question if you prefer.

Q What does the British Pilot say the construction of the lights at Roncador and Serrana are?

A They are openwork pyramidal towers.

Q What are the lights of those towers?

A If I remember rightly, Roncador is 52 feet; Serrana is 72.

Q In your opinion how far could you pick those up on radar?

A About 8 to 10 miles under favorable conditions.

Q Captain, I show you Exhibit I, which is Capt. McGinty's deposition and exhibits. Have you examined those?

MR. BAILLIE: The question arises as to whether or not the Court will accept this evidence. I renew my objection.

THE MAGISTRATE: Hold on just a minute, please.

Well, Mr. Jacobsen, he can testify as to whether he has read it, but he is not going to be able to do anything else because it is not in evidence as yet.

Where did you propose to go?

MR. JACOBSEN: Well, what I proposed to do was to ask him if he read it, and the exhibits, and then to evaluate what he has read.

THE MAGISTRATE: How can we do that with something that isn't in evidence yet?

MR. JACOBSEN: I am prepared to offer them in evidence now. I so offer them.

THE MAGISTRATE: The problem with that is I then have to read the deposition to determine whether it is admissible, and that would take up a bit of time.

MR. JACOBSEN: Could you accept it subject to your Honor reading it?

THE MAGISTRATE: What is the nature of the objection as to the exhibit?

MR. BAILLIE: I think we can narrow what the

issue is now. I fully appreciate that the admission of evidence of tests and so on is within the discretion of the trial Judge to receive or not. It is a question of whether or not it is so remote and the conditions are so different, that the test evidence will be of any value on it. And it is our contention that these depositions give evidence of what these particular people did, who testified, under conditions which are not at all shown to be similar to what were in effect on the night that the stranding occurred.

THE MAGISTRATE: You used depositions plural. I gather you are referring not only to Capt. McGinty but Capt. Gregware's deposition?

MR. JACOBSEN: There is another one, Capt. Lowell. That one comes closest to duplicating conditions.

I don't understand the objection. Actually these fellows went up three different ways and all passed San Andres. It is like Capt. Cushman has testified. Capt. McGinty's deposition is along the same line.

THE MAGISTRATE: The question is: Is this admissible evidence, was it taken at times and places and conditions reasonably similar to indicate that on

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the night in question the IRISH SPRUCE could have made use of San Andres.

The problem with ruling on this as a question of evidence is that it may well be the ultimate factual issue in the whole case if it is determined that the San Andres radio beacon could have given at least a line of position and possibly a running fix on the night that the IRISH SPUCE ran aground, and if it is determined that the ship's officers failed to use it because the ship was inadequately supplied with nautical publications, that of course could be determinative finding in the litigation.

To reach that conclusion one has to make a factual determination as to the capabilities of the beacon which I suppose which only can be found on the basis of other peoples' experience at other times.

It would seem to me that the weight to be given to such tests would depend upon the similarity of location, the similarity of weather conditions, the similarity of equipment used, which is something I wouldn't really know until I have read all the depositions.

However, I would guess that even for the least similar one it is just a question of diminishing

returns. You can get to the point and you can say well, this one is so different that I don't give it much, if any, weight. However, I don't think if the witnesses were here live, I wouldn't reach that conclusion until the end of their testimony, and consequently I'd have to take the testimony subject to connection.

I think I will have to do the same with the depositions. I will have to admit them subject to connection and evaluate the weight to be given to them at the conclusion of reading them.

Consequently, I will admit them in evidence with those limitations and for those purposes, and you can mark I, J and N in evidence. Don't physcially mark them in evidence, although it occurs to me it might be a wise idea at some point for appellate purposes, if for no others, that we went over these and struck off for identification on everything that's been admitted into evidence so there will be no controversy about it.

MR. JACOBSEN: We also offer McMahon. So there is 4 of them. It is their exhibit.

MR. KOSTER: That's Exhibit 66.

MR JACOBSEN: Exhibit Q.

THE MAGISTRATE: How can it be their exhibit if it is Q? Are you offering it?

MR. BAILLIE: We are happy that Mr. Jacobsen accepts our witness.

MR. JACOBSEN: I would note that Capt. Cushman has already testified on this subject from another ship and there is no way that there can be exact -- that the conditions could be exact on another ship at another time.

THE MAGISTRATE: That of course is clear, but you can get really close or you can be really far away. I think of the various considerations, weather and location are possibly the two most important, but I may become convinced that the use of the equipment involved--

MR. JACOBSEN: [Interposing] I think that all goes to weight.

THE MAGISTRATE: It certainly goes to weight.

MR. BAILLIE: Your Honor, there is a further objection. I don't know how it can be made. Most of the bearings taken by the witnesses they have deposed were taken by junior officers and not by the witnesses.

MR. JACOBSEN: That's covered in the deposition, your Honor, and the witness testified he was the master of the ship, and there was a navigation chart on the

ship, and he testified as to what he observed during those depositions.

THE MAGISTRATE: Well, let's see now. If we were dealing with the actual voyage in question as to which each of these deposed witnesses has testified, I would think that the vessel's charts would be admissible in evidence through the master even though he did not personally take the bearings since he has responsibility for the navigation of the vessel, and again it goes to the weight to be given to the bearings since they weren't taken by the witness himself. The bearings are taken by a ship's officer or navigator.

MR. BAILLIE: If I may say, I think you are under a misapprehension. Those are not ship's records.

MR. JACOBSEN: They are ship's records from another ship.

MR. BAILLIE: They are not.

MR. JACOBSEN: They are.

MR. BAILLIE: They were made essentially for this --

MR. JACOBSEN: They were not.

THE MAGISTRATE: I had the impression they were not. I had the impression that these vessels were going that way anyway.

MR. JACOBSEN: This is a navigation chart from those ships.

THE MAGISTRATE: It is their actual chart of that voyage. It would be rather expensive to send a vessel down just to take readings for this case.

MR. JACOBSEN: We can't afford that.

THE MAGISTRATE: However, I am going to have to reevaluate this entire evidentiary question at the conclusion of the trial and at the conclusion of my reading these depositions.

As I say, this is a cause and effect here that the ultimate conclusion of the case affects the admissibility of the evidence rather than vice versa. However, that's unavoidable.

MR. JACOBSEN: One thing I would just like to add: Our basic case with respect to the radio beacon at Isla San Andres is Exhibit E, the Admiralty List of Radio Signals Volume 2, 1971.

THE MAGISTRATE: Even if the vessel were --

MR. JACOBSEN: What it says about that station.

THE MAGISTRATE: Even if it were improperly provided with navigational publications, if in fact the navigational aids which it had failed to use would not have been any help, then it is an immaterial factor

in the ultimate case.

MR. JACOBSEN: I know. But at least with this publication reporting one thousand watts, and one thousand watts having a range of 240 miles, which I consider to be conservative, I think that that is in itself evidence as to how useful this station is. It is not the only evidence, but it is some evidence of that station.

THE MAGISTRATE: Capt. Cushman and other witnesses have suggested that considering the static interference that night, considering the fact that it is an aero beacon and not a marine beacon, that it would not have been of much assistance had they attempted to use it.

Now, I realize your witnesses, and by deposition, are going to testify to the contrary.

MR. JACOBSEN: Our expert is definitely going to testify to the contrary.

MR. BAILLIE: May I point out something else, too. All of this discussion overlooks the fact that Capt. Kerr knew that station was there.

THE MAGISTRATE: I have read Capt. Kerr's deposition, or at least I have read part of it. I am still reading it. And he gives a rather general

acknowledgement that he knew the station was there.

MR. BAILLIE: If he failed to --

THE MAGISTRATE: He didn't state, however, that he knew what its capacity was and how many watts or if he knew whether or not it was one of those aero beacons that gave reasonably good marine navigation.

I believe that the navigator stated that he was unfamiliar with the fact that it was there.

MR. BAILLIE: He didn't even bother looking for it.

MR. JACOBSEN: He didn't know the schedule because it wasn't given.

THE MAGISTRATE: We will move on.

You may for purposes of answering, assuming you are given a hypothetical, assume the facts as stated in those depositions before you.

xx [Cargo Claimants Exhibit I, J, N and Q received in Evidence]

BY MR. JACOBSEN:

Q Captain, have you examined Capt. McGinty's deposition with those exhibits?

A Yes, sir, I have.

Q Do they show radio bearings on the charts?

A Yes, sir, they do.

Q Have you analyzed those radio bearings?

A Yes, I have.

Q How do these radio bearings that you have analyzed compare with any other fix that the vessel had like radar or celestial?

A Well, on this particular ship they also used a Loran as well as radar and the RDF bearing compared quite favorably both with Loran and with the radar fixes.

Q Can you quantify that, can you tell us how different they were from the others?

A I would have to look at the chart.

Q Go ahead.

MR. BAILLIE: I suggest, your Honor, that this is hearsay on hearsay.

THE MAGISTRATE: The deposition isn't considered as hearsay.

MR. BAILLIE: One witness testifying to this based upon what other people took by way of bearings, and then you have this witness testifying -- hearsay on top of hearsay.

A This is the actual navigation chart of the ship. We have here an RDF bearing, 1820. He has been taking star sights at the same time. I am not exactly

sure on that.

THE MAGISTRATE: I would suggest to you, Mr. Jacobsen, that this particular series of readings that you are dealing with now were taken from substantially closer to San Andres.

MR. JACOBSEN: That's it. We didn't do any one. We got closer, further, and on the other side, and the composite of the three is of value, we submit.

THE MAGISTRATE: I think those taken from farther away would be more impressive because one of their arguments would be that they were on the fringe area of using San Andres.

A There is a 1820 RDF, at which time he was -- 1820 was 120 miles away and 1820 -- there is a 1812 position, another 120 miles away, his bearing would have been 4 1/2 miles over to the westward of his course line.

I am looking to see if I find a bearing farther away.

THE MAGISTRATE: Let me ask you, Mr. Jacobsen, if the deposition of Capt. McGinti, which I have not as yet read, does he comment on the accuracy of the RDF bearing as compared to other navigational fixes?

MR. JACOBSEN: Yes, he does.

MR. KOSTER: He does, your Honor, over objection

THE MAGISTRATE: Picking up Mr. Baillie's point here, what purpose do we serve by having this witness comment upon Capt. McGinti's or upon his navigator's RDF fixes?

MR. JACOBSEN: This witness is measuring the chart work and just telling us what's already here. It is a question of putting it in the record.

THE MAGISTRATE: Capt. McGinti did not do that in his deposition.

MR. KOSTER: He did. This is repetitive.

THE MAGISTRATE: Then why are we bothering to do it again?

MR. JACOBSEN: We don't have to, your Honor.

THE MAGISTRATE: I would just as soon not. If you want to draw from this witness a conclusion having made comparisons of several different ships -- not conclusions an expert opinion having looked at the charts of several vessels and compared the accuracy of the RDF readings with other fixes established through celestial and other navigational means as to the value of the use of RDF, that's fine. But I don't think in order to do that it is necessary to have him track each one made and give a comparison for accuracy.

MR. JACOBSEN: No, that's true. I was only going to ask him what it said because he is a master mariner and uses dividers very well. But I can refrain from that.

THE MAGISTRATE: I don't think it is necessary, assuming your witnesses on depositions did it for you.

BY MR. JACOBSEN:

Q Captain, you sailed on ships with RDF?

A Yes, sir, I have.

Q About how many?

A At least 20.

Q And when would that have been, what period of time?

A From 1930 up to the present.

Q Did you sail on any since 1930 that didn't have RDF?

A Not that I can recollect.

Q What makes of RDF have you used?

A Basically in the 1930's there were several models being made in those days. They finally settled down to either an RCA, Mackay or Raytheon.

A How did they compare operationally?

A Basically the same.

Q Have you used aero radio beacon for marine

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use?

A I have used them extensively.

Q How does it compare operationally using an aero radio beacon as compared to a marine radio beacon?

A Basically they very often are superior because they are much more modern with many new modernizations and generally much stronger. On the other hand, if they are not exactly listed within a radio aid to navigation, it would be foolish to do it. That means they are far inland and subject to errors. Along the coast or out in the open areas I found them quite accurate.

Q Have you used the radio beacons other than coming into a harbor?

A Yes, I have.

Q How do you use a radio beacon?

A Well, preferably to try to get across with two radio beacons, two or three. But if there is only one available, why, you use it with a running fix exactly as the same with celestial navigation with a line of position being run up to another line of position.

Q Is this a common technique?

A Common technique all over the world.

Q Is it set forth in the nautical manuals?

A Yes, sir.

Q I show you Exhibit 10, the 1969 List of Radio Signals. Have you examined that book?

A Yes, I have.

Q Is it true that Isla San Andres is not listed on any of the indexes in that book?

A No, sir, it is not in the geographical index, it is not in the alphabetical index. It is not in the alphabetical index of identifying signals.

It does show out on this pull-out in the back.

Q Does it give any information in the pull-out about schedule?

A No, it does not.

Q Or about the power?

A Nothing there about schedule or power. Merely lists it with identifying signal and a frequency to tune in on.

Q Captain, as a master mariner and based on what you see in the back of Exhibit 10 thereon the pull-out diagram, based on that only, what is your opinion as to how useful that radio station would be to a navigator for marine navigation?

A Well, I don't think I would even consider

using it because it is quite obvious it was never intended for a surface navigation.

Q Why is that?

A Because it isn't listed anywhere and there is no details given on it.

Q Is there a warning given in there?

A Yes, sir, there is a warning in here.

Q I direct your attention to page 65.

A The warning in here says: "The inclusion of an aero radio beacon in this volume does not imply that it has been found reliable for marine use."

Q I show you Exhibit E, which is the 1971 List of Radio Siganls. Have you examined that document?

A Yes, sir, I have.

Q Is the same warning included in that book, the 1971 List that you just referred to in the 1969 List?

THE MAGISTRATE: Which exhibit is this he is looking at?

MR. JACOBSEN: This is E, your Honor.

A It says: "A number of aero radio beacons considered to be particularly unsuitable for marine use have been omitted from this edition."

Q Isla San Andres is omitted?

A No, it is not. It is in this. And furthermore, there is a notice over here, "A radio beacon established for both marine and air navigation."

"Only selected aero radio beacons likely to be of particular use for marine navigation are listed and charted."

Q Where is Isla San Andres listed in Exhibit E?

A It is listed all the way through. It is listed in the geographical index, in the alphabetical index, the alphabetical index of signals.

Q Is it indicated in the service details?

A Yes, sir, it is.

Q Does it give any information about schedule?

A It gives a schedule, it gives the power.

Q What is the schedule?

A Continuous.

Q What is the power?

A One kilowatt.

Q Comparing those two books, Captain, the 1969 List and the 1970 List, is there any substantial difference between them?

A Yes, there is a very great difference.

Q What is that?

A In the 1971 they have evidently just examine

and tested -- they have incorporated a great many aero radio beacons and put them in their list of signals.

MR. KOSTER: Object to the answer. I don't understand what "evidently tested" means. Is this witness basing that on some of --

THE MAGISTRATE: I think you can cross-examine him on that point.

I wish the record would reflect that the documents to which he is referring is a comparison of Exhibits E and Exhibit 10, Exhibit E being the more current of the two.

Q Referring to Exhibit 6, the chart in use on the IRISH SPRUCE, looking at that chart, if you were navigating northward so as to proceed between Serrana and Quita Sueno Bank from Cristobal Canal, can you tell us whether or not you would use the aero radio beacon at Isla San Andres?

A Absolutely.

Q Where would you start using it?

A I would start using it just the minute my course line intersected the chart that I was operating with. I'd use it on another chart farther south. When I got it here, I would use it direct.

Q How far north would you continue using it?

A Until I was completely clear of all dangers to navigation.

Q Would the radio beacon at Isla San Andres have any value to you as a danger angle in the vicinity of Quita Sueno Bank?

A Yes, sir, it could be used as a danger angle.

Q Would you have to use speed?

A Yes, you'd have to use a bearing on San Andres and the speed of advance of the ship. In other words, it would layout a radio direction finder bearing and take from a certain position of a ship that is knowr and almost like sweeping around with the compass where that would intersect on the RDF line, that would give us a rough position.

THE MAGISTRATE: I don't think that was the question you asked him; was it?

MR. JACOBSEN: I think so, your Honor.

THE MAGISTRATE: I didn't understand the question.

Q Going back to the question about the danger angle, and as you approach Quita Sueno Bank from the south, how would you use the aero radio beacon at San Andres?

A I would take a bearing on that, and if that

bearing intersected up too close to Quita Sueno Bank, that would be considered I was standing in danger.

Q You are using the word "intersect." I think that's what the Judge is talking about.

THE MAGISTRATE: What do you mean by "intersect," are you using speed?

THE WITNESS: Speed, yes. Where that RDF bearing would intersect with my speed circle.

Q I see.

A Very much the same as using it on a navigation sheet.

Q In other words, you could take speed from 12:00 noon say and run it up to whatever time you are taki g the radio beacon bearing?

A Yes, sir.

Q And where the two intersect?

A That's right.

Q Now, would this bearing, danger angle bearing become more valuable or less valuable as you proceeded north?

A It would become more valuable because it would be closer to your hazard.

Q What about the angle, does the angle become more significant considering the location of San Andres

and Quita Sueno Bank and the projected track of the vessel?

A Yes, it would become more significant because it would not be so much over on the beam. It would drop further abaft the beam and it would be more in line with the vessel's course.

MR. JACOBSEN: Your Honor, on the depositions of Capt. Gregware, Lowell and McGinti, the depositions and the exhibits speak for themselves, as opposing counsel say, but in some instances it may require some measuring. Again, the charts speak for themselves. We may have to put that in a brief. That's all I wanted to add at this point.

THE MAGISTRATE: I can always measure them myself from the exhibits. I know how to do it.

MR. JACOBSEN: Good.

No further questions.

THE MAGISTRATE: My only problem that I may have dealing with these exhibits, Mr. Jacobsen, is that I might not be aware -- obviously, a star line is a star line, because you have several lines crossing. You are not going to get more than two lines of position. But I am not certain that I would know that an RDF line was an RDF line as opposed to a Loran line unless

the exhibit somehow differentiates between them. 264

MR. JACOBSEN: I think they do.

THE MAGISTRATE: Do they use any particular abbreviations?

Capt. Cushman, for example, had one I have never seen before. He was using a Zulu symbol for a bearing or something like that.

MR. JACOBSEN: It does, your Honor.

CROSS-EXAMINATION

BY MR. KOSTER:

Q Capt. Patterson, you testified on direct examination that DF and celestial might be the only useful aids to navigation.

A For the ship of the IRISH SPRUCE.

Q A vessel could set a course near Providencia and make use of radar; could they not?

A Yes, they could, provided they are within radar range.

Q There might be some areas with a fathometer would be helpful to them?

A Way over to the westward where they are on the Bank line, yes.

Q You are referring to the current warning in Exhibit -- the new Pilot?

A Exhibit D.

Q You suggested that that would suggest to you that somebody ought to stay well clear of Quita Sueno Bank?

A That's right.

Q Is there a caution in there as well for Serrana Bank?

A Serrana Bank?

Q I suggest you turn to page 71, line 53.

A The only caution here is that most of this description is taken from a survey carried out in 1833.

Q May I see the exhibit, please?

Would you read the next sentence.

A "Mariners should exercise extreme caution in the vicinity of Serrana Bank because of the strong current."

Q Mariners don't have to worry about offshore current; do they? I mean, you would assume -- would you assume that that warning refers to currents setting up over the Bank to the east?

A One would assume that it could be in any direction. They don't give us a direction.

Q You heard testimony about other vessels

experiencing an easterly --

A We have hard testimony already.

Q If one overcompensated they might find themselves on Serrana Bank?

A Quite possibly.

Q Captain, did you read Capt.Kerr's testimony?

A Yes, sir, I have.

Q Exhibit 60. On the previous voyage they in fact set their course closer to Roncador; did they not?

A I don't recall exactly, but I wouldn't question it.

Q They didn't need Exhibit D to do that or to tell them to do that; did they?

A I would not know exactly because I don't know the thinking of Capt. Kerr at the time.

You see, every master sets his own course according to his own views.

Q As a matter of fact, since you didn't know his thinking when you were testifying about a danger bearing, if Capt. Kerr knew that RDF station was there and he didn't take a danger bearing, I take it you wouldn't consider that prudent?

A I don't think he would take it because he knew nothing about the station other than the fact

that there was a signal given and there was a frequency. He had no schedule and no indication of the power of the station.

Q You had never spoken directly to Capt. Kerr, so you don't know what he knew from other sources as well?

A No. I have no knowledge of that.

Q You also testified about Loran coverage, Capt. Patterson. I wonder if you would refer to Exhibit H, particularly to Article 7-4C, Article 720.

A On the radio beacons here?

Q Yes. It should be way toward the middle of the book.

A Yes.

Q Loran Sea Tables.

A Yes, sir.

Q Is there a chart on that page, Captain?

A Yes, sir, there is.

Q What does that purport to show?

A That shows the area we are considering here is out of the gray line.

Q And the gray is the sky wave area?

A That's right.

Q So that the area off Yucatan and Panama

generally according to the chart in this book is not considered within the Loran coverage area?

A No, it is not.

Q Captain, you've testified from the depositions of Capt. McGinti and Lowell and Gregware to the extent conditions differ you would agree, would you not, that conclusion to be drawn might have to be altered or modified?

A Would you please repeat that?

Q To the extent conditions differed on the voyages that these captains made from the conditions that were in existence on the night of January 26-27, 1972, a conclusion might have to be modified or altered?

A I have no doubt.

THE MAGISTRATE: It probably would have to be.

Q Capt. McGinit, his route took him on the opposite side of San Andres; didn't it?

A That's right.

Q Capt. Lowell's voyage was all in daylight, at least that portion of it during which he was taking RDF fixes?

A At the moment I'd have to look at that to recall in my mind the exact times of the day when

those were taken.

Q Do you recall around 5:00 o'clock when there was a radio bearing and they had to disconnect the aerial?

A Right.

Q And that was just as they were approaching the Quita Sueno Bank, was it not?

A I believe it was.

Q Perhaps the closest situation or at least the situation with respect to which there were storm conditions is Capt. Lowell; is that correct?

A I say again I'd have to look at that deposition to refresh myself.

Q Captain, let me read to you from that deposition, Exhibit N, page 29 and 30:

"Q You said that your vessel passed through squalls on the voyage that commenced on October 5. Were these electrical squalls or were they not?

"A Yes, there was some lightning and thunder.

"Q How much?

"A Well, let's say normal for the Caribbean. Nothing unusual, let's put it that way."

Are you familiar with that part of it?

A Yes.

Q A little further on, Captain, did he not testify that the null got broader?

A Where was this now?

Q Further down the page, line 17.

MR. JACOBSEN: I suggest you read it, Captain.

A There is a question -- answer to a question: "Well, we took an RDF bearing at 1300 and there was static and the signal was a little weaker, and we had a little broader null than we had experienced earlier."

Q Captain, on page 43 -- excuse me just a minute.

Do you recall that portion of his testimony, Captain, where he testified that during the storm the null was about 10 degrees?

A No. It is on ~~no~~ 43 here, at line 9, 10, 11, 12, in that area.

Q Do you recall the storm, he did have a null of 10 degrees; did he not?

A Yes.

Q Captain, would you refer again to Exhibit H, which you had in front of you a moment ago, the radio signal book. Would you refer to page 1-2. There is a subheading on that page that's called "Operator's Error," about two-thirds of the way on the first column.

A Yes, sir.

Q The middle sentence in that paragraph reads:

"For instance if the minimum is broad and the residual signal covers about 10 degrees with equal strength, it is doubtful if the bearing can be accurately estimated."

What does that mean, Captain?

A I would say based on that it would have to be interpreted by the operator of the set under the conditions that he was experiencing at the time.

Q At least with respect to Capt. Lowell, when there was a storm, he got a 10 degree null?

A Yes, that's what it appears to be.

Q Captain, were you in the area of San Andres at all in January 26-27, 1972?

A No, I was not.

Q So you don't know whether this aero radio beacon transmitter was actually in operation or not; do you?

A No, I have no idea other than the fact that they are supposed to be a continual signal.

Q Lots of things are supposed to operate according to the schedules; don't they?

Page 1-2 on the first column it says:

"NOTE: Mariners are advised that changes to and deficiencies in aviation radio facilities may not always be made immediately available to maritime interests..."

That's not the end of the sentence. So we have nothing definite that that station was in operation, do we?

A Nothing that I can see.

Q Have you been on San Andres?

A No.

MR. JACOBSEN: Are you suggesting that the island is not there now?

MR. KOSTER: No. I will accept that.

Q Let's assume, Captain, that the station was in operation; in order for Exhibit E to have been of benefit, somebody would have had to have looked at it; right?

A Yes, for your regular signals.

Q They didn't really look at what they had, did they, according to their testimony?

A Apparently not.

Q So that this aspect of your expert testimony that leads up to the bottom line that that book was vital depends on an assumption that you make as to

how people were to behave.

A It is an assumption on the behavior of the ordinary professional seaman.

Q Captain, if the mariner had looked in Exhibit E, what would he have found? Would you look at Exhibit E, please?

Please look at San Andres

A San Andres.

Q Look under the S's.

A You wouldn't find it there.

Q Where do you find it? Do you find it under Isla?

A It shows under Isla.

Q How do you know to look there?

A That is always the problem with alphabetical indexes. If anything covers more than one port.

Q Is there perhaps not a note at the beginning of the index suggesting that Isla may be found under island?

Well, Captain?

A Nothing in there to state that -- indicate that.

Q In other words, in order to use a book you have to know where things are, or at least the

directions that the book itself sets forth as to how it is to be used?

A Yes.

Q Captain, would you look at Exhibit 10.

A Yes.

Q Captain, on page 526 of that book --

A Yes.

Q -- there is a note concerning the alphabetical index: "Aero radio beacons are not included in the numbered series of stations. They are therefore omitted from this index."

A What?

Q I'm sorry.

A Oh, yes. "Aero radio beacons are not included in the numbered series of stations. They are therefore omitted from this index."

Q So you know if you read that that they were not in the alphabetical index?

A That's right.

Q Captain, we heard testimony that most of the beacons down in this area are aero radio beacons; is that right?

A That's correct.

Q So next you would have to look at the

geographical index; is that not correct?

A That's right.

Q Would you look -- and presumably San Andres we would go in under Colombia; is that correct?

A Yes.

Q Would you look on page 11 under Colombia.

A In the same?

Q Same publication, Exhibit 10. Exhibit J, excuse me.

A Under Colombia, Caribbean Coast?

Q What does that direct you to?

A 427.

Q Would you turn to 427, please.

A Right.

Q What does it say about aero beacons?

A Aero beacons, Venezuela, Colombia, one, that is not listed. The others are all aero beacons.

Q There is a general note concerning aero radio beacons, is there not, right under Colombia?

A Not anything I could see here.

Q Does it not say aero radio beacon see page 65?

A Yes.

Q Turn to page 65, please.

Actually there are a couple of pages about aero

radio beacons; are there not?

A Yes.

Q Would you turn to page 67. There is a heading there entitled "Method of Listing Aero Radio Beacons."

A That's right.

Q The second sentence of that says: "However, the larger aero radio beacon sections have been subdivided geographically, where appropriate, in order to make it easier to select beacons for use in any particular area, bearing in mind that, although aero radio beacons are shown [in blue] on the radio beacon diagrams, many have had to be omitted from the diagrams on account of limitations of scale."

Would that suggest to you as a mariner that you ought to look at the diagrams in the back?

A Yes.

Q And the book has led you to each one of those pages that I have pinpointed out to you; has it not?

A That's right.

Q When you got to the back you would find an aero radio beacon on San Andres; would you not?

A That's right.

Q You would use it; wouldn't you?

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A With the information they have in this I would be very hesitant to use it.

Q Captain, you've testified, and I know the depositions that -- the captains whose depositions were taken have testified that they use everything if they thought it might help them.

A Yes.

Q You might use it whether or not you knew the power was there?

A Yes.

Q In some sense the information in Exhibit E is also in Exhibit 10 if you use it properly?

A No, it is not all there, absolutely is not.

Q Portions of it are not?

A Portions of it are not. Most important portions are not.

Q Captain, in order to get to the bottom line of your testimony as well we have got to assume that people would have decided to use this soon enough so it would have made a difference so they would have had -- so they would have had time to take a running fix.

A We can assume that.

Q On the 12 to 4 watch nobody thought to even look at the book; is that correct?

A I already seen they did. (sic) 278

Q They had a fix?

A Yes.

Q They were expecting evening stars, so it is possible it would have occurred to them that they were without a position up until they missed the evening stars?

A Right.

Q And even then since they expected to pickup Roncador and had several miles to travel through deep water perhaps it wouldn't have occurred?

A I wouldn't exactly understand what was going through Capt. Kerr's mind at the time. Quite frankly, I would have started in with an RDF earlier than that approaching -- going through these waters from that particular angle.

Q We have to assume, do we not, at some point that they would have started to take them?

A Yes.

Q And that's an assumption about behavior?

A Yes.

Q And if they had taken them, there are a lot of factors that would bear on the information they get from them, the things that we have mentioned, the

atmospheric effects, night effects and so on?

A Yes.

Q Even if they had gotten an assemblence of a fix, we have to further assume that this would have recorded it as reliable and acted upon the information that it conveyed to them?

A Yes.

Q Captain, if a mariner is passing an island at a range of over 70 miles, do you know why he'd be concerned about getting that island abaft his beam?

A If he is passing an island 70 miles away and there is nothing else around, he has no worry about that island in any direction.

Q Would you refer to Capt. Gregware's testimony. Capt. Gregware was transiting east of San Andres; was he not?

A Yes, he was.

THE MAGISTRATE: Which number is that, J?

THE WITNESS: Yes.

MR. KOSTER: Yes, your Honor.

Q And he was running north, was he not?

A Yes, sir.

Q Would you refer to page 20:

"Q Can you recall at what point you were

sleeping on the night in question?"

A What line is that now?

Q Line 7.

"A Well, approximately, I was on the bridge, I would say, I was up there 10:00 o'clock, getting that fixed, and after midnight, I layed down, and got up around an hour late, you can't sleep until you got by the point, and I was on the bridge taking those, and I stayed on the bridge until we got passed the San Andrews Island. You can always tell in going by, by taking the bearings, whether she is right on the head or abeam or after the beam, so when she got abaft the beam, I layed down and got up before stars, until we made the turn; and that was right up until noon."

By looking at the chart annexed to the testimony, can you tell me where Capt. Gregware's ship was in relation to San Andres Island when he was going abeam?

MR. JACOBSEN: Does he have to read previously in the deposition to answer this question?

MR. KOSTER: I think it was all contained.

Q The question, Captain, is: How far was he abeam when he passed San Andres?

A 79 miles.

Q Captain, Capt. Gregware also testified that

he had confidence in the information he was getting from his RDF running fixes; didn't he?

A That's right.

Q Then why on earth was he worried about his position with respect to an island that the information should have told him was 70 miles away?

A Because that was the guide for him coming up between by Serrana Bank and Quita Sueno; when that was abaft the beam, he had his position here, he knew where he was, he had no worries about going in-between those two Banks.

Q Would you turn to page 28. I am sorry, it starts on 27, line 22:

"But you didn't rely solely on RDF?

"A No.

"Q You had a Loran and star fixes?

"A The Loran is not perfect in this area, and I only got one Loran fix, so actually, I navigated up with RDF, except when I got to the morning stars, which proved out everything perfect."

As a matter of fact, he had morning stars before he headed through Quita Sueno Channel; didn't he?

A Yes.

Q Again, Captain, he testified at the bottom

of page 28 -- I have to start up a little bit above -- line 21:

"Q You also had an RDF line. Now, there is a ~~distance~~ between the two?

"A Yes.

"Q What is that difference?

"A The difference is approximately 5 miles.

"MR. O'REGAN: Measure it off, Captain.

"A Four miles."

And the Captain stated: "But the overall picture, you can see, with the Loran --"

Does that not indicate to you that he considered the information that Loran gave him in addition to the RDF information?

A Not really.

Q He wasn't relying solely on RDF?

A No, he didn't have to.

Q He didn't make his departure to the area of the east of Quita Sueno Bank relying on RDF?

A It was not necessary for him.

Q There were no storms on his voyage?

A Apparently not.

Q Captain, in your experience as master have you ever had the occasion to lay to in your vessel?

A Many times.

Q And on what occasion has that occurred?

A Stormy weather conditions had to heave to and not go any further on. I have been off of ports that was not safe to enter, except in daylight, conditions of that type.

Q As a matter of fact, conditions of that type, according to the rules, virtually mandate that a vessel do that?

A If a vessel would do that, all --

Q [Interposing] You are aware that Capt.McMahon testified that is exactly what he did on this vessel?

A Yes.

Q He was north of Quita Sueno area and headed south?

A That's right.

Q But he did not have a takeoff point?

A Right.

Q So a stranding could be prevented by simply stopping when the vessel is unsure of its position as it advances towards shoal water?

A That will depend on how far off the shoal water is anticipated. If there is plenty of depth around, I don't see any reason for the vessel to stop.

If it is approaching to a shore, yes. If they are approaching an area that is in danger of shoal water, yes.

MR. KOSTER: No further questions.

THE MAGISTRATE: Mr. Jacobsen.

REDIRECT EXAMINATION

BY MR. JACOBSEN:

Q Captain, referring again to Exhibit 10, this is the 1969 List, are aero radio beacons listed in that volume?

A Yes, sir, there are.

Q For example, on that page you are referring to there there are aero radio beacons; are they not?

A On this, yes.

Q When Mr. Koster questioned you, he directed your attention to page 65. Would you look there again? There is a warning, is there not, on the left-hand page?

A Yes.

Q What is that warning again?

A A number of aero radio -- excuse me, there is a sentence. There is a paragraph up over the warning proper.

Q Well, the part about stations being omitted, would you read that?

A "A number of aero radio beacons considered to be particularly unsuitable for marine use have been omitted from this edition and others may be removed by Section VI of the Weekly Edition of Notices to Mariners."

Q So some aero radio beacons are listed in that vol[illegible] but Isla San Andres is not listed?

A [illegible]ght.

Q Going to Exhibit E, the 1971 edition; if you had any difficulty alphabetically with the words Isla San Andres, could you go to the geographic index there?

A Yes, we do.

Q Could you find Isla San Andres there geographically?

A It would come under the Colombian area.

MR. JACOBSEN: No further questions, your Honor.

THE MAGISTRATE: I have a few questions for the witness.

BY THE MAGISTRATE:

Q Captain, you testified that in some instances you find aero radio beacons preferable to marine beacons because they are newer and stronger.

A That's correct, that's right.

Q Can both aero beacons and marine beacons send up their signals on the same horizontal plane?

A No. The aero radio beacon has a different transmission, which I am not familiar with the technicalities, but they do project up into the air as well as over the surface.

Q Does that fact make them more subject to atmospheric electrical disturbance than a usual marine beacon?

A I would not know it. I am not qualified to answer that.

Q Do you know whether the aero radio beacon on San Andres is a manned beacon?

A I do not know.

Q Do any of the aids to navigation which are in evidence tell you that fact?

A There is --

Q If you have got a manned beacon then you normally have a notice to mariners if it is out of operation for any period of time; is that correct?

A That should be so.

Q Whereas with unmanned beacons you only get notice to mariners if some passing vessel reports

the fact they are not picking up the signal?

A That's right.

Q May I have the chart which the vessel was using, the small chart.

Captain, you have testified that you felt that the course projected by the master was a prudent course in light of the --

A Yes.

Q -- navigational material he had on board.

A Yes.

Q Let's take his assumed position at 1600. He had projected a course which passes close to Roncador Bank, quite close to the Quita Sueno Bank and not too far off the southern part of the Serrana Bank; is that correct?

A That s correct, sir.

Q Now, he could have avoided all three of those Banks by a substantial margin had he simply maintained a north heading up until latitude 15 before returning to the northwest; is that correct?

A Yes, he could have.

Q Now, the advantage to taking the projected course would appear to be two-fold, first, it is somewhat more direct?

A Yes.

Q And secondly, it gives you a chance to get a fix from the lights at Roncador, perhaps Serrana, and more likely Quita Sueno; is that correct?

A Yes, sir.

Q However, we know that the problem with the Roncador Light is that it doesn't give radar coverage much more than 5 or 10 miles, and under the weather conditions then existing it is possible that the visual sighting might be limited to the same distance; is that not so?

A Yes, sir.

Q Consequently, by projecting this course he ran the risk of having a miss at Roncador around midnight and having no takeoff point to pass off through rather treacherous banks; is that not so?

A That was he hazard right now.

Q Under those conditions would not a more prudent course, considering the weather conditions, the time of day and the instruments aboard the vessel have been to sail from 1600 DR due north to latitude 15 and then change to northwest?

A He could have done that, yes, sir. As I pointed out, every master of a ship will have his own

ideas as to what route he should take. That's as individual as he could possibly be in that respect.

Q Let's take his position in midnight, or rather his assumed position. You heard Capt. Cushman's testimony as to what he would have done in light of the fact that it had been 12 hours since they had a fix, and the fix at 12 hours earlier was only an advance sun line. They had been in heavy seas, but they had not picked up the Roncador Light, he did not believe that the San Andres beacon would be of any value, he did not have Loran. Under all those existing conditions what in your opinion was a prudent navigational navigational decision at that point?

A Well, at that time, considering that position from midnight, he would only have really three choices: He could not go up in this direction because --

Q By "this direct," you mean to the northeast, which could take him from Roncador?

A Yes. If he knew his position, fine.

Q We know that he didn't know his position.

A So he had one alternative. He could head over here to the west here and get a radar fix on old Providence Island.

Q I thought that was a suggestion from

Capt. Cushman, but when I pointed out to him that since they didn't know their position and they could just as easily have gone east of Roncador as west of Roncador, that the danger in doing that was that they might shoal on the southern part of Roncador Bank.

A It is a possibility if they were that far over. In my opinion I would not consider them over that site.

The other alternative would be to run out here a short distance than head up north. This is 40 miles across this gap.

Q What you are saying is that they should have squared their course away so as to take the angle of least danger in a passing between Serrana Bank and Quita Sueno Bank?

A That was an alternative.

Q That would have called approximately for a course change to almost zero sometime around 2:00 o'clock?

A I would say about 2:00 or 3:00, yes.

The alternative to that would be on his way up is to try to pickup the light on Quita Sueno Bank, which is not a pyramidal tower, as the other lights in the area are, but a solid tower and should give a radar range of about 12 to 14 miles.

Q Any other possibilities?

A The only other possibility he would have is to turn around and head south a bit and wait until daylight and hope he could get some celestial navigation, which is rather doubtful, considering the weather in that area.

Q That was also suggested by Capt. Cushman, I believe.

What you are saying is that while you don't criticize the projection of the course or the navigation up until midnight, that prudent navigation from midnight on might have called for several different alternatives, none of which include that which the vessel in fact took?

A Well, with the information they had, and they did not know about this strong westerly set, there was a possibility, and as I have said before, no one can ever estimate exactly how an individual ship master will plan his course.

Q What you are saying essentially is that it is a judgment decision, it is discretionary, it is difficult to make; you believe the fact that he didn't know the caution about the currents setting to the west onto Quita Sueno might have been sufficient to

have caused him to have made a different decision had he been aware of it?

A Yes, sir.

Q Of course, you can't be certain of that?

A No, sir, I cannot. I have no idea of what he thought of at the time.

Q Of course, it is always easy to second-guess another captain after his vessel has run aground. But trying to put yourself into his position, as he was at midnight when he didn't have Roncador, and knowing what he did know and not knowing what he didn't know, do you believe you would have done what he did?

A I would actually have to be there at the moment, but I wouldn't. I might have done what he did. I might not. I could not answer that affirmatively or negatively either way.

Q You gave some testimony concerning the danger angle you would have used had you been using the San Andres radio beacon.

A Yes, sir.

Q And it may be just a matter of terminology and it's been some 20 years since I have had any use of these, but I found it difficult to follow precisely what you were saying. It would seem to me that if a

master were using San Andres radio beacon and were getting reasonably good lines of position, a simple way to use it as a danger angle would be to tell the navigator not to let the bearings on San Andres fall below 190 degrees, and if they fell below 190 degrees he should alter his course to the northward.

A That would be a very simple way to use it as a danger bearing.

Q Assuming, of course, you were getting reasonably good lines of position from San Andres.

A Yes, sir.

Q Would the fact that old Providence, which apparently has an altitude of I read it as 1190, can it be that way?

A It is a very high island.

Q Is the fact that Providence Island, which is fairly high, is on a line between San Andres and the projected course to the east of Quita Sueno Bank a factor that would cause the RDF coverage to be interfered with or limited in that area?

A I believe it would.

Q However, that would occur until you went north of approximately latitude 14 or 1420?

A There should be just a wedge of poor signal.

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THE MAGISTRATE: That's all the questions I have.

Any further questions of this witness or may we excuse him?

Thank you, Captain, you are excused.

[Witness excused]

THE MAGISTRATE: It is 1:00 o'clock. We finished right on the button for lunch. I will see you back here at 2:00 o'clock.

[Luncheon recess]

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AFTERNOON SESSION

2:00 p.m.

THE MAGISTRATE: Mr. Jacobsen, call your next witness.

MR. O'REGAN: Mr. McNally, please take the stand.

I R V I N G L A W R E N C E MC N A L L Y, called as a witness, being first duly sworn by the Magistrate, testified as follows:

THE MAGISTRATE: Please be seated and state your full name and address for the record.

THE WITNESS: Irving Lawrence McNally, 26119 Fairlane Drive, Sun City, California.

DIRECT EXAMINATION

BY MR. O'REGAN:

Q How old are you?

A 64 years.

Q Are you retired at the present time?

A Yes.

Q Since when?

A 1970.

Q And before your retirement would you give us something of your background, your education and

employment?

A I was born in Minneapolis, Minnesota, and I graduated from the University of Minnesota with a degree of Bachelor of Electrical Engineering in 1931. At the same time I also received a commission as a second lieutenant in the Signal Corps Reserves.

I joined the Navy on 1 October, 1931 and had continuous duty until I retired from the Navy on 1 July 1956.

I was then employed by Raytheon for 14 years, and I retired from Raytheon in 1970, and since that time I have been engaged as a consultant, writer and teacher in my specialty.

THE MAGISTRATE: I couldn't follow that. Right after you got a second lieutenant's commission in the Signal Corps, you joined the Navy I assume as a civilian employee?

THE WITNESS: No, sir.

THE MAGISTRATE: How do you go from being a second lieutenant in the Signal Corps to being in the Navy?

THE WITNESS: If you would like it off the record.

THE MAGISTRATE: Put it on the record.

Is it a personal thing?

THE WITNESS: No. I went on active duty with the Army, and my specialty had been electronics, and I found that I could not get a job in the Army in electronics, and I went to my captain at Fort Cook, and his name was Harlan C. Roberts, and he counseled me and recommended that if that's what I wanted to do, I should go into the Navy, and I did.

THE MAGISTRATE: They let you out of the Army and let you join the Navy?

THE WITNESS: Yes.

THE MAGISTRATE: What was your rank when you joined the Navy?

THE WITNESS: I joined as an apprentice seaman.

THE MAGISTRATE: What was your rank when you left the Navy?

THE WITNESS: I retired from the Navy as a commander.

BY MR. O'REGAN:

Q Mr. McNally, will you tell us something about your activities during the time you were in the Navy?

A Just so there wouldn't be confusion, I will break it into noncontiguous areas that relate to

certain things, like I had 10 years of sea duty. I had 13 years of duty at research laboratories and design functions, and 2 years of schooling.

Now, these were mixed up, interspersed through my years in the Navy.

Q Could you tell us something about the 10 years broken up, as you indicated, about the 10 years at sometime or another while you were at sea in the Navy?

A While I was at sea I was a radio operator, I was also a sonar operator, and I had 3 years assigned specifically as an RDF operator, and that, I might point out, that covered the area from the North Pacific to the Orient, to the Tropical Zone, to the Caribbean and the Atlantic Coast up to the North Atlantic. In addition to that I was an electronics officer, a CIC officer, a watch officer.

Q And would you tell us something about your civilian acitivites during the time you were with Raytheon?

A You want me to skip the rest of my period in the Navy?

Q No, go ahead, continue.

A The 13 years that I was assigned to various research and development and engineering organizations

included the duty at the Naval Research Laboratory where I worked on direction finders and beacons and radio and on radio antennas, and of particular note there, I took one of our -- two of our direction finders out to the fleet and one of them out to the Orient for evaluation and test.

I worked at the Navy Electronics Laboratory where my duties out there involved sonar, radar, but most important of all, the early development of the Omega System. I spent 7 years in the Bureau of Ships in charge of the electronics aids to navigation, and this involved all forms of radar, ground control approach, carrier control approach, Loran and Tacan.

In fact I do not think there is a single electronics aid to navigation in the United States Navy that I have not been involved with.

I then had a final tour of duty in the Navy was 2 years with the Office of Naval Research and at the Lincoln Laboratory drawing up the specifications for the Navy Tactical Data System, which is an electronics system which uses a computer and does all the navigating, the maneuvering, target, daily insertion, aircraft control and alike.

That about summarizes broadly my Navy duties.

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When I went to Raytheon, I was given the job there as manager of the same area, radar and other navigation aids, primarily radar, and this radar involved ship borne radar and air search radar, air traffic control radar for the FAA, and two very interesting projects because of my interest in ship navigation was the Ratan equipment for the Coast Guard, which was installed at Bayonne, New Jersey, at which an antenna 30 feet across was used to span the Narrows and the harbor here, and that picture was broadcast over television and could be picked up by any ship in the area with a simple television receiver.

The other equipment that the Coast Guard sponsored the development for was the SEDS, which mean the Shipboard Electronic Display System, and it involved the most sophisticated surface search radar fully stabilized, and a scan converter to convert the somewhat dim PBI picture that plagues the navigator into a bright scan conversion television picture. It also incorporated electronic maneuvering board and all the features that the Coast Guard wanted to evaluate as their utility as aids to navigation. True motion was incorporated, and this I carried out the evaluation with the Coast Guard, I think it was Capt. Peterson, and I know the

ship was the VIGILANTE.

MR. O'REGAN: I offer for the Court's convenience Exhibit U, which is the resume of Mr. McNally. It shows additional information and it concerns his background. It may be of interest. It would shorten the time rather than for me to go through it.

MR. BAILLIE: I object to its admission. The witness is here, and he has stated his qualifications.

MR. O'REGAN: If counsel --

THE MAGISTRATE: I think you have established the witness's expertise in the area of electronics aids to navigation, and that's really all you have to do. You have also established this in a rather impressive manner. I don't think anything further will be necessary.

BY MR. O'REGAN:

Q Mr. McNally, have you personally ever operated a radio direction finder as a navigational device?

A Yes.

Q Where did you do that?

A About 3 years aboard as the DF operator on the battleship PENNYSLVANIA and on numerous other ships where we were testing and evaluating direction finder equipment, radio direction finder equipment.

Q You say you were actually also engaged in the development of radio direction finder while you were at the Naval Research Laboratory in Washington, D.C.?

A Yes.

Q Have you ever sailed on merchant ships through any State Department assignments?

A Yes. Part of the responsibilities of my job while I was in the Bureau, I was delegated to the State Department to represent the United States in the international meetings that were held on aids to navigation.

This was the meeting held in London and New York and the International Civil Aids Organization meetings and also several other scientific committees and boards primarily for the full exchange of information with the British. And this was one of the gratifying things of our cooperation with the British. It was a 100 percent exchange of techinical information between the two organizations.

Q Did you yourself evaluate the British radio finder and other electronics equipment used by the British?

A I did not personally evaluate the operation of a British direction finder, except in reviewing the technical specifications, its performance,

sensitivity, selectivity and performance figures and I must say that we learned an awful lot from the British.

I think they were the leaders in the direction finder field, and I found that I personally know Sir Robert Watson, I know of Keene and Adcock, and we lean very heavily on them in our work.

Q How would you compare the radio direction finder of say the 1930's with radio direction finder of say starting from 20 years ago?

A The principle has not changed through the years. The principle of determining the bearing of a radio transmission, that has not changed. But like any other device, it has improved due to improvements of components and the state of the art is constantly being improved, but the principle is the same.

Q Would you explain to the Court briefly what is the principle behind radio direction finder, how does it work?

A Well, all of them are based on a loop or a loop configuration, fixed loops, and when the loop is turned broadside to the signal, if everything is operating correctly, you will get an absolute null.

Now, as you turn the loop toward the signal, the

signal builds up. Unfortunately where it gets the null and where it works the best, the signal is the least, and therefore the equipment has to be extremely sensitive so that it detects the slightest deviation from the plane of the loop. That is one of the requirements.

The signal may be very strong that he is picking up, but the detection of the null requires a very -- the null is better, the more sensitive the receiver is.

Q So it is a question of a transmitter putting out a signal and a receiver?

A Receiving it and determining the plane of the approaching wave.

Q Are you familiar with the reputation of Marconi?

A I looked into the developments of Marconi, and as a result of this trip here I spent about three conscientious days reviewing the Marconi instruction books, their operation manual and their technical manual, and all of their technical characteristics, specifications and so on, and I only have one comment on it -- it is an absolute superb design and it represents the state of the art today.

Q The publications you are referring to, Mr. McNally, are these Exhibits K-1 entitled Instruction

Manual for Marconi Lodestone 2 and 4; Exhibit K-2 entitled the Marine Radio Finder, and Exhibit K-3, the Lodestone 4 Direction Finder Brief Specifications; are those the documents you are referring to?

A Yes, sir. One of them is somewhat of a sales brochure-type of thing.

Q That is K-3?

A Yes. K-2 emphasizes more the operational capabilities and so on, and K-1 is a full technical manual with all of the technical and engineering details concerning operation, maintenance and calibration and all of the essential information needed.

Q Do you have an opinion as to the quality of the Marconi Lodestone Mark 4 Radio Direction Finder as a piece of equipment?

A Yes, it is excellent.

Q Mr. McNally, are you familiar with any other publications which might discuss factors which one would consider in connection with determining the range and accuracy of a radio direction finder in use?

A Yes, sir. I my business it is necessary to avail yourself or acquire every document or reference that relates to your profession, and this includes Dutton and Bowditch. And I have in my own library

Keene, who is the authority on direction finders, but one of the most valuable publications that I have come across in recent years and I made available to all of my engineers was a comprehensive study that was made for the North Atlantic Treaty Organization, and they were given the task of evaluating all of the current electronics aids to navigation that were proposed or in existence, and they covered such things as Decca and Tacan, and interestingly enough the very first ones they considered was radio direction finding.

Q Is this the book which you have brought with you today?

A Yes, this is the book that I use as a reference.

Q What if anything does that book which you have before you indicate by way of factors to be considered in connection with determining range and accuracies of radio direction finder?

A The book is very well organized --

MR. BAILLIE: The book will speak for itself. It is a reference book. We want the witness's ideas.

THE MAGISTRATE: Well, the problem is that, as I see your objection, you are not objecting to him giving his own opinion. You want him to give it and then support it from the book.

MR. BAILLIE: That might be all right.

A I can answer that. Research development organizations and so on call together groups of the most skilled scientists in the field and so on, and one of the mechanisms to determine what is required is to have a study. And many of these times I participated in the study.

So just briefly, this book tells you exactly what power you need and what sensitivity you need in order to get a certain range of performance, accuracy and range. It gives you the requirements to achieve certain operational objectives.

THE MAGISTRATE: Counsel for the IRISH SPRUCE is asserting an objection based upon our manner of legal proceeding rather than the scientific approach that you are using, and we have a procedure with experts where the expert first gives his own opinion about things, then tells what he bases it upon, rather than starting off with what he bases his opinion upon and then giving his opinion.

I don't know in the long run that it really makes any difference to me, but it is one of our legal traditions, so rather than explain to us why you rely upon that book, why don't you first give us what your

beliefs are with respect to the ranges and capabilities of RDF's, and then we will draw out from you what you base this opinion on.

Do you follow me?

THE WITNESS: Yes, sir.

THE MAGISTRATE: Your last question, as I remember, was, you wanted to know what factors had to be considered with respect to the range and capabilities of an RDF.

MR. O'REGAN: Yes, sir.

Q Give us your opinion, please, Mr. McNally.

A Well, the several factors concerning in meeting the range and accuracies, first, I would say frequency, you have to pick a part of the spectrum that demonstrates that it is useful in this case, and in the particular case of the beacons, it has been established that frequencies in that general area of 300 kilocycles and everything is a compromise, that that is quite satisfactory for this function, and most of the beacons of the world are located in that part of the spectrum.

We could say, well, we get better performance if we go lower in frequency.

Decca goes down to 100. We get still better per-

formance if we get down to 10.2 kilocycles. However, for the numerous radio beacons required, this presents an insurmountable problem in getting enough stations and big antennas and so on. So 300 kilocycles represents a good choice, all things considered.

Now, the next thing you have to do is figure out how much power you are going to need, and certainly 5 watts wouldn't be of very much use to you if you want to get long range, so you come out that if your desired range is somewhere in the range of 100 to 200 miles, that you will need a kilowatt of power, with the practical antennas that it is possible for you to put up.

Now, 300 kilocycles, a half-wave antenna is about 500 meters. You would have a horrendous antenna. So part of your problem is in getting up the beacon is that the antenna is quite inefficient, relatively speaking, and in the order of 15 or 20 percent is about all of the antenna you can get with available reasonable height of 50 to 100 feet or so, and therefore you do need a kilowatt of power.

Now, we have established then that what do we need aboard the ship?

Well, in order to pickup the signal from a

one kilowatt transmitter feeding into this available antenna, we will need a certain senitivity in that direction finder, and that can be determined readily, and I have found out that the Marconi Direction Finder meets these sensitivity requirements exactly. In fact, very conservatively.

Q Mr. McNally, I refer you now to page 19 of Exhibit E, the Radio Signal Book for 1971. Does that contain information there as to the distance a one kilowatt output would be?

A Yes, it does. It says one kilowatt of output power, range 240 miles.

Q Do you have any comments to make as far as --

A It is a very conservative figure.

Q What do you mean by that?

A That you could expect to achieve this range. It says under good conditions, and therefore you would wonder how does it operate under let's say degraded conditions, and in one of the things we wanted to check-up was how much signal do you need to have the direction finder give you a satisfactory bearing?

And we find out that with this one kilowatt that the signal required is sufficient.

However, if you reduce the range to 200 miles,

you find the signal is about twice as strong as it is at 240, and therefore you would have under degraded conditions certainly ranges of at least 150 to 200 miles.

And it is interesting to note that Bowditch quotes a figure of 400 miles, and theoretically you should be able to get it out to 500 miles, and all of these documents have double clause in them, and they will point out a practical range that the navigator can expect under the shipboard conditions and the day in and day out life of navigating on the bridge, and then it holds out in the next sentence, "But on many occasions ranges far in excess of this are obtained."

Q The reference, Mr. McNally, you made to Bowditch, we have marked it as Exhibit S.

Are you referring to the statement on page 298?

A Yes. The book speaks for itself.

THE MAGISTRATE: What page is that?

THE WITNESS: Page 298.

Q Is this the statement that you were referring to: "Medium frequency, 300 to 3,000 KC."

"Ground waves provide dependable service, but the range for a given power is reduced greatly, varying from about 400 miles at the lower portion of the band to about 15 miles at the upper end for a transmitted

signal of one kilowatt."

A That's the authority. The lower portion of that band is the spectrum of our radio beacons, and unfortunately the upper part of it embraces Loran and necessitates much, much higher powers under Loran to achieve these ranges.

Q Mr. McNally, how is range determined for a one kilowatt transmitter, in other words, what does it depend on?

A Well, it depends on the power of the transmitter and also on the quality of that transmitter in terms of its excellence of design, and it also depends on the antenna system which embraces the ground system and the tower, and I might add here, that we are fortunate that most of the aero radio beacons are much new than the old marine beacons, and the problems we have had with the old marine beacons, the towers have become corroded and the joints have higher resistence. That introduces a noise on the signal which degrades its peformance, and they were not quite as thorough or under a strict Governmental specifications in their installation of ground system.

Q Does the range also depend on the sensitivity and performance of the receiving equipment?

A At the other end of the link here, the range does depend on the sensitivity of the equipment and its selectivity and its quality and its stability and so on.

Q And of course the environment in general, would it not?

A Well, the environment does control the range at which a receiver of a given performance will receive this signal. But we designed the equipment with enough margin of performance to cope with very severe environmental conditions. That is designed into it. Otherwise, it would be a very simple process to make a direction finder that didn't have to cope with anything.

Q Did you do any calculations yourself to determine the information contained in Exhibit E to which I just referred you, namely, the one kilowatt at 240 miles?

A Yes, I did. And I found they were very conservative, very conservative indeed, and working backwards from that, I found that they were using antennas that were reasonably efficient in the range of 15 to 20 percent, which is, you can do better than that, but that's reasonable. But that's a reasonable design.

Q Looking from the point of view of receiving,

how would Marconi Lodestone Mark 4 equipment on board a vessel fit into the picture, would it be able to pickup signals at the distance to which you were just referring for a one kilowatt transmitter operating at as low as 15 percent efficiency?

A Yes, the sensitivity of the Marconi equipment could be certified as sufficient.

There are other attributes of the Marconi equipment which are perhaps relevant, and this is a subtle one, and I hope I don't complicate the issue too much.

The Marconi equipment has a sensitivity several times greater than that necessary to just receive the signal. When you start out operating a direction finder, the first thing you have to do, and this applies to all direction finder equipment, and is clearly spelled out in the Marconi instructions, you have turned the equipment on, let it warm up and stabilize, and then you put it on omni, which means you are able to receive signals from all points of the compass.

Having done so, you tune in very carefully to the frequency designated. If it is a 100 kilocycle situation, you tune the frequency dial to that, and in order to facilitate you finding this station and identifying it, you use what is called the wide band selectivity,

and once you have found this, why then you listen for the identifying Morse code signal so you are sure you are on the right station, and having found it in, then you observe the signal strength on omni, and then you throw it to DF. Now, you turn the direction finder until you get a null, and at the same time if the signal is being masked by static or electrical atmospheric noises, you resort to a well-known technique in this profession, and that is, you narrow the band, and most of the equipment have selectivity bands, you can go to narrow band width, and then you can go to filter. Static is a broad band situation, covers the entire spectrum, and you are permitting all of this noise energy to enter your receiver in competition with the signal energy, and therefore you reduce the band width at no discredit to the desired signal, and the narrower the band width, the more you favor the signal.

That was particularly important when you are using a CW signal, and that's why it is important in the list of the signals to find out what the modulation is. If it is a zero or a one, this indicates that it is a CW signal, and one is on all the time, the radiation from the transmitter, and the other one is interrupted with the Morse code.

THE MAGISTRATE: Mr. McNally, what do you mean by CW?

THE WITNESS: Continuous wave. The emission from the transmitter is continuous, and theoretically the band width of that signal is zero because it contains no information. And therefore you have to key it like you would a telegraph and send your dots and dashes to send the characteristic signal.

If you put voice on it, then the voice modulation would mean you had to broaden the band width to 2 or 3 kilocycles in order to understand the voice.

I do not know whether the European countries -- and this is because I can't know everything. The American people though have provided a second carrier along with the fundamental carrier, and this carrier is located 1020 cycles removed from -- and it is keyed, and the result of two frequencies, it is a well-known beat note effect or heterodyne, and you get a tone for identification purposes.

Now, the reason for this is just to simply to accommodate the yachtsmen and other people who do not have a receiver capable of receiving CW and they have to have a beat frequency oscillator.

Q Let's concentrate on the Marconi.

THE MAGISTRATE: If this is all important, it lost me.

A The Marconi equipment does receive the CW and it narrows a band width down.

I would just bring up the point that in order to receive a beacon, you must know the characteristics of it, what kind of a signal it is, whether it is A-0, A-1, A-2, whatever it may be. And this is an important factor to be contained in the radio aids to navigation.

Q Mr. McNally, is this what you are referring to when you say A-1, etc.?

A In the list of signals it describes what the emission of the station is.

Q I refer you to page 183 of Exhibit E.

A Yes.

Q The information contained there in one of items is A-1; is that correct?

A This is very good because it tells you what you need to take a bearing. One, the identification Morse code signal, the frequency, the emission, and that is keyed telegraphy. It tells you the power and it tells you its availability is continuous and it likewise gives you the location.

THE MAGISTRATE: What does the A stand for?

THE WITNESS: It means that this is keyed continuous wave. It is keyed only to send the code letters. It is the same as the radio operator keys with his hand the message. This is done with a code wheel that says dit-dit-dot-dot-dot.

Q Would you refer to that page again, 183. What does continuous mean?

A Continuous is that it is available at all times. If you just happen to notice right above it, as an example, it says day --

THE MAGISTRATE: So we don't get confused, he is now referring to the beacon on Turbo as being one that operates only during the daytime.

THE WITNESS: And the one on Isla Tiera Bomba, you will notice that its availability is very limited. And you'd have to be right on the ball to get bearings from it.

Q So continuous available?

A Day and night, at all times.

Q Mr. McNally, is it necessary to know whether, or to be familiar with whether a Marconi Radio Finder is equipped with a filter selectivity switch in order to operate it properly?

A Yes. You lose most of the advantages of

this equipment if you have to operate it at all times on wide band. You gain tremendous advantage by going to narrow band or filter, as I pointed out to you, and I think the narrow band filter on this I recall is about 150 cycles.

Decca uses the same thing and goes down to 20 cycles, and Omega goes down to 100 cycles. And the limitation as to how narrow you can use a filter is again practical. It depends on the stability of the transmitter and the stability of the receiving equipment.

Q But you'd have to know that selectivity filter was there, a switch was there for your use?

A Yes.

Q In order to operate the equipment properly; is that correct?

A Yes, sir.

Q Would it assist you in narrowing your null?

A Yes, that's because you would be competing less with all the electrical interference, that energy, you would be getting more signal into the receiving and less energy from the noise.

Q So that the null sharpening control would be quite important in operating this equipment; would it not?

A Would be very important, but the null sharpening control is not, if you want to say, an antistatic control.

Q That's due to ship's structure, is it, or what is it?

A The zero sharpening control's fundamental purpose is to reduce that residual signal which gets into the direction finder by virtue of the coupling from ships' structures, guides, antennas, handrails and alike.

Q Mr. McNally, have you ever operated radio direction finding equipment as a navigational aid?

A Yes.

Q Would you tell us a little bit about it?

A My tour of duty on the PENNYSLVANIA with the radio direction finder, it was the only radio aid to navigation that we had in the 30's, the only. This is pre-radar, pre-Loran, and all of these devices.

Q Did you find it to be a reliable device for navigation?

A It was very reliable, and we gave it the same loving care that the navigator gives his sextant and his compass and his chronometer.

Q Have you yourself ever plotted a running

fix using radio direction finding bearings on a signal station?

A Yes.

Q What were the results of those fixes?

A Very satisfactory.

Q If you know the speed of your vessel and its heading, would a running fix show you if your vessel were being set by a current?

A Yes, and depending on the correct accuracy of your speed heading, like every input has its effect on the results, the accuracy of the speed and the heading and the accuracy of the direction finder bearing, you can determine to a high degree of accuracy your drift and your set.

Q Can radio direction finder equipment be used at night?

A Yes.

Q Have you --

A In fact, it seems to me that that was when I was using it most of the time.

Q How would you compare its performance at nighttime with daytime conditions in general?

A In general, it is not as good where we could get bearings that I would certify as excellent in the

daytime, I might have to drop down to very good or good at night.

The beauty of the direction finder, the operator, and the young operator, who has a keen oral acuity, he can narrow that beam down much, much closer and get very precise bearings, and he knows then if the bearing is good and would reject any bearing that might be useless to the navigator.

Q By using the controls say on the type of Marconi Lodestone 4 equipment, could you reduce that null at night?

A This technique of reducing the effects of electrical noise and reducing the residual signal, they have been with us from the early days in the early 30's, I should say, on direction finders, and by careful adjustment and careful concentration, you can get nulls easily down to a degree or two.

Q And would this also apply if you encountered high atmospheric noise at night, or static?

A There would be some degradation, depending on the level of the noise. But I never found it a limiting condition in all the years that I operated direction finders. The selectivity tool is a powerful tool in discriminating against the static. If you

don't use it, you are missing half the capability of the direction finder.

Q And how does your experience fit into the one kilowatt 240 miles range as indicated in Exhibit E?

A In what respect is the one kilowatt, do I figure that it is adequate?

Q Yes.

A Yes. One kilowatt is very adequate and I did encounter some difficulties with organizations that wanted -- in wanting to up the power. But the advantage of doubling the power to 2 kilowatts is almost negligible, and the complications and cost and everything far outweight the small advantage you would get as we say only 3 DB, which is small gain in engineering.

Q Can you also operate radio direction finding equipment during the day with storms in the area?

A Yes, and usually there the ground wave is what you are using, and it is no problem at all. You have to take into account that you are competing with the static, but as I said before, it has never been a limiting condition.

I presume if I were right in the midst of a severe electrical storm with lightning striking the

ship and so on, I might change my mind.

Q You have sat here during the testimony in this case in court; have you not, up to this point?

A Yes.

Q What would you say would be the effect on your radio direction finding equipment on a vessel such as the IRISH SPRUCE if she were pitching and rolling heavily as it was described in this case, could you still operate that equipment?

A You can still operate it, but there again I would liken it to the same problem that the navigator has in getting a sextant sight. The ship is rolling and pitching and the signal may change its strength due to that situation, and the residual signal may change due to yaw because the aspect of the signal relative bearing is changing, and therefore the effect of the zero sharpening control is changing.

But under those conditions, this is part of the life at sea, you continue to try and take bearings, a series of bearings, multiple bearings, and conditions will be more favorable at one instance than another. And this part of the skill of operating a radio direction finder, and I have never seen, not once experienced a situation where I could not get a usable bearing.

It may be degraded to good or fair, but always able to get a bearing.

Q And along those lines, what about the expression "night effect," what comment would you have to make about night effect?

A We have a matter of semantics here. In the early days of direction finding we didn't know what cuased this residual signal at night. It seemed to be the residual -- the residual signals seemed to increase at night. There was no difference in it, but we called that the night effect. And then when we got smarter, we found out it was due to the sky wave, the conflict between the ground wave and the sky wave that was doing this, and it was most severe around the period of twilight.

Some references say plus or minus a half hour, others say plus or minus an hour. But it is even possible to take bearings under that condition if it is necessary.

Marconi quotes a figure of 3 degrees. That probably is a reasonable figure, but in general I felt that if I were going to keep up the confidence of the captain in this device that I better stay away from bearings at this crucial hour because as soon as you get degraded

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bearings, then confidence is weakened, but as soon as the stability of the ionosphere is settled down, then the perturbations in the pluralization are not so violent and they may be slowly changing back and forth, and if you take just one signal solitary bearing, you can't really guarantee it. You have to take a series of several bearings, and in most cases you are going to be able to get in this series of bearings one of them that is excellent or good, even at night. And I never have had to deny a bearing to my captain from the radio direction finder.

Q Does the latitude that a ship is operating at have any effect on the performance of radio direction finding equipment?

A You may have a greater prevalence of the static and it may be more frequent and it may be a little bit more severe. But it just depends.

I was in the Philippines, it is latitude 8 degrees, and never had any problem. It may have been that we didn't have the squalls and things that there might be prevalent in the Caribbean.

When we made our transit, I made four transits to the Caribbean, I didn't experience any problems that I couldn't cope with.

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Q Mr. McNally, I refer to Exhibit 10, Radio Signals Volume 2, 1969; have you looked at that before --

A Yes, I have.

Q -- coming to court today?

A Yes, I have.

Q Mr. McNally, referring to Exhibit 10, is the aero radio beacon for San Andres listed in any of the indexes in that book?

A Yes, it is. I have looked at it and I think that's been established.

Q I am referring to Exhibit 10, not Exhibit E. That's Exhibit E over here. This is the new one. The 1970 one, do you see it indicated on a pull-out in this book?

A Yes.

Q The pull-out has been identified --

A Yes.

Q -- as an exhibit, Exhibit 10-A?

A I would --

Q What information is contained on that pull-out in connection with San Andres aero radio beacon?

A It merely -- San Andres it is called, identification called SPP and the frequency. There is no other information as regards its precise location,

its power, or emission.

Q Anything there about its times of operation?

A No.

THE MAGISTRATE: Isn't that what you meant by emission?

THE WITNESS: No, sir.

THE MAGISTRATE: What is emission?

THE WITNESS: That is what the transmitter puts on the air. It emits a radio wave. This is what I referred to as availabilities. Availability means is it available at all times, night and day.

MR. O'REGAN: Emission, your Honor, would be the amount one --

THE MAGISTRATE: Which I didn't understand before either, but that's all right.

THE WITNESS: Emission, we have to describe what a radio station is putting without -- whether it is television of whether it is frequency modulation or whether it is broadcast amplitude modulation, whether it is modulation like Loran.

In this particular case it is a continuous wave, which is the best for beacons.

Q Mr. McNally, what if anything would you conclude regarding San Andres aero radio beacon if you

looked at Exhibits 10 and 10-A and found only the information which is contained on 10-A?

A My opinion would be that it had not yet been accredited as a viable aid to electronics navigation.

Q Why do you say that?

A There isn't enough information on there for you to use it.

Q I refer you to the warning, which is No.4, and appears opposite page 65 on Exhibit 10. Would you read that, please?

A "A number of aero radio beacons considered to be particularly unsuitable for marine use have been omitted from this edition and others may be removed by Section 6 of the weekly edition of notices to mariners."

MR. BAILLIE: We have been over and over this.

THE MAGISTRATE: He is now going to give his opinion as to what the import of that would be.

Q Is a similar warning contained on page 14 of Exhibit E?

A Yes.

Q Now, we have noted that San Andres and its characteristics is contained on page 183 of Exhibit E, and we have discussed the meaning of each item.

What if anything would you conclude by the information contained in Exhibit E, which is not in Exhibit 10 as to the effectiveness of San Andres aero radio beacon?

A Well, I would conclude from this that it was a useful beacon in operation.

Q And referring to the statement on page 13 of Exhibit E, which states: "Only selected aero radio beacons likely to be of particular use for marine navigation are listed and charted."

Would that have any bearing on your opinion?

A Yes, and I would conclude from that that any beacon that was unsuitable by virtue of its location far inland or low power or ot[illegible]cteristics would not be included.

Q Mr. McNally, have you read the testimony of Capt. McMahon of the Irish Shipping Limited which has been marked Exhibit Q?

A Yes.

Q Have you also read the deposition of Capt. McGinti, Exhibit I, Capt. Gregware, Exhibit J, and Capt. Lowell, Exhibit N?

A Yes.

Q I will read to you a portion of the testimony of Capt. McMahon on page 30:

"Q Well, then, Captain, assuming you have adequate marine RDF equipment on your vessels, as I assumed you have had, is it not a fact that aero radio beacons can be used to advantage for purposes of navigating?

"A Yes, they can be used, but I have always been taught that they must be used with caution.

"Q They can be used but with a caution?

"A Yes.

"Q You have to be careful when you are operating your equipment, do you have to be --

"A Well --

"Q Excuse me. You have to use care and it takes some skill on the part of the operator to do it, too, does it not?

"A Yes, it does. But why I say is because aero radio beacons are mainly beamed for aircraft rather than for surface vessels."

Would you have any comment to make on Capt.McMahon's testimony?

A That's a two-part statement. I would certainly agree that you have to exercise care in taking a bearing on any beacon.

Secondly, there is nothing very different between

a marine beacon and an aero beacon from a radio beacon standpoint. The only difference may be that radio marine beacons are located in places where there are entrances to harbors, and channels, and quite often they are ranged so you can get fixes. The aero radio beacons are located en route, this particular one I presume is a very favorable location for aircraft transiting between New Orleans and Panama.

But as far as radiation of this beam, there is no difference between the marine beacon and an aero beacon, and there is no directing of the beam upward. That's not so. In fact, the energy is along the surface, and if you stop to think at a plane flying at about 20,000 feet, the surface raising angle to get 150 miles, the energy must go along the surface. And there is and positively no direction of the energy upward and reduction of the energy on the surface. It is ground wave.

Q On page 41 of Capt. McMahon's testimony the following questions and answers:

"Q But there were other nights --" I should preface this by saying that these questions were directed to Capt. McMahon in connection with a night where he said he had a great deal of difficulty in getting anything from San Andres.

THE MAGISTRATE: Capt. McMahon is an officer of the Irish Shipping Lines?

MR. JACOBSEN: Master.

THE MAGISTRATE: What vessel was this?

In any event, it was Plaintiff's Exhibit 66 and your Exhibit Q.

MR. O'REGAN: Yes, your Honor.

BY MR. O'REGAN:

Q "Question: But there were other nights when you could get something, is that true?

"A There were other nights when I could get them.

"Q You could and --

"MR. KOSTER: Let the witness finish.

"A Yes, I see what you are -- what you mean. Where you mean the full period as you call it. But what happens down here where there is so much static around is that at times the bearing alters entirely."

Mr. McNally, would you comment on that, please?

A This is what we have been discussing, the effects of night effect and static, and I would say that if I properly tuned this in and resorted to the narrow band or the filter position and used the zero sharpening control and tried to take a bearing and

then if I experience a situation where I got absolutely no null whatsoever in the entire azimuth, I would consider that something drasticly had happened to my equipment or the ship's structure to bring about this effect.

Q Then those comments would also apply to Capt. McMahon's testimony on page 11 where he indicates: "Well, when you are taking a bearing of a radio beacon, the point at which the signal is at an absolute minimum or silent altogether is the point of the bearing, and this we call a zero. This would give a shary bearing, but in the event of it -- of interference, sometimes or distance from the station, it sometimes happens that the zero might cover 2 or 3 degrees. But in this case of taking the bearings at night, he could obtain no zero at all. The signal was even. There was no diminishing of the sound."

A That is what we call the residual, and the residual, the zero sharpening control is incorporated into the equipment to reduce that residual to an absolute minimum. And when the direction finder is installed and calibrated, one of the things the installing activity does is set the input to the zero sharpening control, which comes incidentally from a small verticle

antenna, and there is what we call an internal adjustment which sets the level of this zero balancing level so it is adequate to cope with the usual residual due to ships' structures.

Q How would you get a small null? In other words, if you had a larger null, how would you reduce it?

A First of all, I would use the maximum selectivity and have careful tuning, and secondly I would while attempting to get the null, I would also adjust the zero sharpening control simultaneous with it; the two of them must be operating in conjunction with each other.

Q Would you ever expect to get a null as wide as 15 degrees?

A That would be hard question to answer because not only the width of the null, there are several factors that effect that null, and as I have pointed out, one is the strength of the signal, and if we assume that's adequate, and then the static, and if we can assume we can cope with that, and then the zero sharpening, if that gives us a further benefit, then the signal is so weak around the null that I could not get a sharper null today as I could when I was 25. It is a matter of

being about to have very high oral acuity there, and young people like that in that particular age bracket, they can detect the slightest increase in amplitude at either side of the center of the bearing.

I probably would get a null 100 degrees broad when I am 100 years old.

Q Mr. McNally, I would like to read a brief portion of Exhibit I, the testimony of Capt. McGinty, and ask you for your comments. It is on page 45:

"Q Captain, would you compare the efficacy of aero radio beacons to marine radio beacons?"

This is in answer to questions by Mr. Koster.

"A I believe I understand what efficacy means, so I will have to answer probably in the vein of an opinion. I think an aero radio beacon is far superior to a standard marine radio beacon.

"Q And aero radio beacon is primarily designed to assist airplanes; is it not?

"A It may be primarily designed to assist airplanes, but actually in my opinion it is a much clearer signal than a standard marine radio beacon."

What comments, if any, would you have to make on this?

A Well, I am sure the aero radio beacon was

established because of a requirement for aero navigation, but the principle of operation is the same, the radiation of an omni-directional pattern and therefore it is useful to the surface navigation problem.

And all navigation aids that we are establishing now, we have to --

Q Mr. McNally, what I am asking you specifically is: What comments you have to make as far as Capt. McGinti's testimony.

THE MAGISTRATE: Do you agree that the aero beacons can be more valuable even for marine navigation than the marine beacons?

THE WITNESS: Yes, I found that to be true, from what I remarked before, and that is it is newer equipment, the antennas are newer, there is less corrosion and the better ground system and the power is generally higher than most of the marine beacons.

THE MAGISTRATE: But that assumes an aero beacon that is located either in the middle of the ocean or on the coast as opposed to an aero beacon that's located in the middle of a continental mass?

THE WITNESS: Yes, sir.

THE MAGISTRATE: How nearly done with your direct are you, counsel?

MR. O'REGAN: About 3 or 4 minutes.

THE MAGISTRATE: We will finish that and we will take a recess.

BY MR. O'REGAN:

Q Mr. McNally, based on your background I understand you have had quite a bit of experience with radar also; is that correct?

A Yes, I was fortunate enough to be in on the very first radar development in the United States.

THE MAGISTRATE: That was after the English; was it not? Didn't the English perfect radar first?

THE WITNESS: If you say perfect it, we were both carrying on before the war with secret developments, and they were in about the same status of development. We had some features that were better than theirs; they had some that were better than ours. They were forced into an accelerated program of installing and utilizing it by virtue of the war. And after we got together, we had a 100 percent exchange of information. They gave us the valuable magnitron. We showed them how to operate a radar on one antenna.

And all I can say is that it was 100 percent exchange and cooperation, and who cares who invented it first.

Q Mr. McNally, do you have an opinion as to the effectiveness of getting a radar target from a skeletal pyramidal shaped tower?

A It presents a very unfavorable target due to the amount of material available for reflecting and also its orientation, which is unfavorable.

So it presents a very unfavorable target.

Now, the most favorable target would be a plane surface at right angles to your radar.

Q What do you mean by the angle?

A A pyramidal tower leans away from where the signal comes, so the impinging radar signal hits it and just bounces off the other way and you get very little return. What you get back is only a scattering, and this is a problem with buoys, and the Coast Guard has instituted a program of putting corner reflectors which are orthogonally placed planes to give you enhanced return. It is three planes at right angles.

Q Mr. McNally, you have heard the testimony in this case. I'd like your opinion based on the testimony, the weather conditions which were experienced by the IRISH SPRUCE, the pitching and rolling of that vessel, the speed she was making at various times, the fact that the IRISH SPRUCE was not equipped with Loran,

she had Decca, which was of no use to her in this area, she had a fathometer, which was of little or no value, again on the high seas, based on the testimony, these facts, the various exhibits which you have examined, including the Marconi publications, the radio direction finding, the radio signal book marked Exhibit E, and the information contained therein, do you have an opinion as to whether the aero radio beacon on San Andres would have provided the vessel with usable helpful information which could be used as navigational assistance.

MR. BAILLIE: Object to the question. There is nothing in here that that beacon was in operation at the time the vessel was progressing through those waters.

THE MAGISTRATE: Amend the question to assume that the beacon was operating as indicated in the light lists.

MR. O'REGAN: I refer to this information in the light list radio signals which indicates it has a continuously operating aero radio --

THE MAGISTRATE: Mr. Baillie is raising the objection that the beacon was broken down at this period of time. I know your position is that there

is a presumption that it continued to operate as it is supposed to, and the burden shifts to him to indicate that was out of commission at this time.

MR. O'REGAN: Exactly.

THE MAGISTRATE: However, we don't have to decide that now. You can simply include in your question the assumption that it was, if it was in fact operating then.

MR. O'REGAN: All right, your Honor.

Q Would you assume that also, Mr. McNally?

A Yes, I would say it would have provided a useful aid to navigation. That is my opinion.

MR. O'REGAN: Thank you.

THE MAGISTRATE: We will take a brief recess.

[Recess]

CROSS-EXAMINATION

BY MR. KOSTER:

Q Mr. McNally, the aero radio beacon on San Andres has a designation, does it not, a call sign?

A Yes. SPP.

Q So if a mariner were to direct his equipment and bearing towards San Andres, he would be able to identify the signal from that source, would he not?

A If it was operating.

Q If it was operating.

A And of adequate power.

Q But if he could get it and if he got the signal then it obviously --

MR. O'REGAN: Let him finish his answer.

THE WITNESS: The degree of picking it up and its adequacy is to its usefulness as a bearing would be different. You might hear it at 500 miles, and it depends, you would have to say that he tuned it in and he heard a signal of adequate strength, then you would have an indication that there was something useful there to be sure.

Q So the accuracy is a function of a range, then?

A Yes.

Q Have you ever taken a line of position on San Andres?

A No.

Q You stated I believe in your testimony that you assumed that the aero radio beacon on San Andres was for planes flying from New Orleans to Panama. Is there a basis for that assumption?

A No. Its geographical location would make it a good beacon for that particular air route. It

would not deny it to any other air route. But if you just look at the chart and there must have been some reason for putting one there. That would make a very good -- you see, I mean the direction finders in the aircraft operates on a homing proposition that the mode of operation is slightly different, but the radio radiation is the same.

THE MAGISTRATE: Counsel is suggesting to you that there is not much air traffic between Panama and the United States. But there may be substantially more air traffic from the West Coast of the United States to South America. However, he is pointing out to your assumption that it was located where it was for purposes of air traffic, if it is correct it is not because of traffic from Panama. Most of the traffic from Panama is by sea.

Am I correct that that is what you were getting at?

MR. KOSTER: In part, your Honor.

Q Are you aware there is an airfield in San Andres itself?

A No.

Q If there were, is it possible this aero beacon is installed for that airport?

A It could be. It would be useful. 344

Q Mr. McNally, you referred to some estimated ranges in Exhibit E, which is the Radio Signals Book No.2.

A Yes.

Q The estimated figure was 240 miles for a one kilowatt station.

A Yes.

Q I believe the word "tentative" was also in there. Perhaps you want to check it?

MR. JACOBSEN: What page is that, 19?

MR. KOSTER: 19.

A Thank you. Yes. Tentative guide.

Q The sentence ends "under good conditions."

A Yes.

Q And the table has no specific reference to an aero beacon on San Andres, it just speak generally of beacons of any sort with certain power output.

A Right.

Q Similarly the quote from Bowditch, I believe that's Exhibit S, that had no specific reference to a particular station; did it?

A No.

Q While you have Exhibit E there before you, let me ask you, Mr. McNally, what is the designation M/F in

the field of electronics?

A I may know, but I don't recognize it by that, unless you mean medium frequency.

Q What would be a medium frequency?

A The medium frequency would I think extend from -- we could look it up in the reference. I think it is from 30 to 300 or 300 to 3,000. Perhaps 300 to 3,000. You have VLF, LF, and then medium frequency. I think it is 300 to 3,000.

Q 300 to 3,000. Is this kilohertz?

A Kilocycles or kilohertz.

Q If I suggested 250 to 550 kilohertz is a medium frequency, would that be of any assistance to you?

A That would be in the -- these demarcations were made fundamentally for the purpose of frequency allocations and not particularly to describe its usefulness for any function.

Q I see.

A That came about from frequency allocations tables to give these different frequencies a name. That was all.

Q Well, the station on San Andres, and I believe it is listed in the exhibit you have in front of you

on page 183, lists in the fourth column after the call sign SPP387. Does that mean 387 kilohertz?

A That's right.

Q So that would be in the MF range?

A That's right.

Q Would you look on page 20 of Exhibit E, I am referring at the bottom of the page to the section headed "Range," the second paragraph, the last sentence, and I quote:

"It is advisable to assume that MF beacons in general are not to be relied upon at ranges of more than about 70 miles in the presence of night effects particularly around sunset and sunrise."

Do you see that there?

A Yes.

Q Do you agree or disagree with that?

A I do not disagree with that statement.

Q Did you take that into consideration when you rendered your opinion in response to your counsel's question as to the efficacy of using the aero beacons on San Andres under a given set of conditions?

A Yes, because like all statements in these publications, they are generally qualified, and it says "assume," it says "in general," and it says

"in the presence of night effect."

So these are qualifying statements, and it must be noted that night effect isn't something that is generally prevalent.

I experienced it very little really that it was a hazard to me. There is degrees of night effect.

Q Mr. McNally, when were you last at sea?

A On what kind of a vessel?

Q When were you last at sea where you had occasion to experience night effect or not experience it?

A During the war.

Q I see. So if there had been any changes in the amount of electronic emission or anything that would effect these phenomena, you have no personal knowledge?

A Night effect is not as a result of the number of electronic equipment. Night effect comes from the individual equipment that you are listening to being reflected from the ionosphere and the only thing that will change it is the condition of the ionosphere, and it only varies with the sunspot activity and the diernal period.

Q Incidentally, would a storm perturb or have

a local impact on the ionosphere?

A Not as to atmospheric storms, only a magnitude storm due to the sunspot activity. No local storm would have very little effect on the ionosphere. It's an ionization that comes from the energy of the sun.

Q I believe you told me you did not agree with that statement then about the limitation of 70 miles.

THE MAGISTRATE: He said he did not disagree with it. Then he pointed out a qualified statement.

Q There are other statements in the book as to the beneficial aspects of aero beacons that are also limited and modified too?

A Yes.

Q Did you consider the limitations and modifications when you rendered your opinion as stated on the beneficial statements about RDF?

A Yes, sir.

Q I take it clearly you are quite enthusiastic about it as an aid to navigation?

A Absolutely.

Q And a number of these publications however do contain considerable warning material?

A They all do, and they all do it for all electronic devices, and I am sure they do it for any

navigation device, the gyro, the compass, all of these constantly alert the navigator to be cautious.

Q I believe you testified that you had also found something beneficial from the RDF bearings that you took.

A Yes. I could not truthfully say that it ever failed me.

Q Well, there are certain limitations on the information that one is likely to get from an RDF; are there not?

A Yes.

Q Is there an opportunity for operator error?

A Yes.

Q What is quadrantal error?

A Quadrantal error is the error introduced by the ship's structure as described in each quadrant, and once you have established the quadrantal error, it is mandatory that you do not change the ship's structure, the rigging antennas, and stays because when the direction finder is calibrated, it is calibrated under a certain ship's configuration, and the quadrantal error then can either be put on a chart or as in the Marconi equipment, it is introduced electronically by compensating coils within the equipment to reduce that

to practically zero, and it is the same technique as used with magnetic compass in the same vein of corrections.

Q And then there is night effect that we have already discussed?

A Yes.

Q We have already discussed that?

A Right.

Q And land effect?

A Land effect. You are cautioned against using bearings that travel first over great distances of land or protracted grazing angles or behind very high mountains where you might have a shadow. But in using a direction finder, the direction finder operator will take these into account, and in this particular book I assume that many of the aero beacons are not included because they are so situated as to have these undesirable effects.

Q We really don't know wherein the aero radio beacon on San Andres is so situated; do you know? Do you know whether the aero beacon is situated there?

A Yes, by a geographical coordinance and indicators on the chart.

Q You mean do you know the topography of the

island as to know where it is located with respect to the coastline of the island?

A Yes, it is -- we know exactly from the charts where it is situated on the island, and the effect of traveling overland is something that just a short distance from the shoreline isn't going to upset you. It is the whole effect, the land effect is due to the change of the conductivity of the land versus the conductivity of the sea water, and this is what causes the beam to be bend slightly, so you are cautioned not to take bearings where there is a transit over, over-land at a grazing angle. If it comes straight from the shore, an aero beacon located several miles straight back from the shore would offer no particular hazard to you if you were taking a bearing.

Q What if there was a hill between the beacon and the shore?

A You would have defraction and refraction around the hill for a distance near the island or the hill for some short distance, depending on the hight and extent and the width of the land and so on. You have to realize that bearings taken where the radio signals have traversed a mountain or a long shoreline and so on, that these bearings you'd have to exercise

great caution. Now --

Q Mr. McNally --

MR. JACOBSEN: Let him finish.

A [continuing] the recommendation that is made in all of these manuals are again and again and again to take bearings under all these conditions to ascertain whether this effect is present. This is the only practice.

Q What if there is a mountainous island between the transmitter and the sea?

A Can you define the height and breadth of this mountain?

Q I will refer specifically to Providencia Island, which I recognize was described as being 1100 feet.

THE MAGISTRATE: 1158 I believe.

A Yes. Shadow extending behind that if you were too close to Providencia, and I could not quote you specifically for that island versus the distance as to how far you could expect bearings to be seriously degraded, but it is not a very serious problem. I have really never been unduly concerned about this problem of defraction, refraction or land traverse, it's never been overwhelming.

Q Does the pitching and rolling of the vessel effect the reception as well?

A It does.

Q Are there cyclic effects on radio signals? Let me put it this way: Does the latitude at which signals are taken have anything to do with their clarity?

A Not accepted. There may be a greater prevalence of static down there, and also at times in periods of intense solar activity of magnetic storms you may have a geographical area where this effect might be more pronounced. But I want to add that direction finders are used in lower latitudes very successfully.

Q Are you aware of studies that have been done as to the accuracy of radio bearings showing that they improve in the higher latitudes?

A Well, they may improve in the higher latitudes I presume of less static, but no significance, and I mean pronounced improvement just by virtue of the latitude.

In fact, you may in the very higher latitudes at times we experience problems from the magnetic pole if you transmit radio signals. This is at very high frequencies. One of the reasons we go to the lower

frequencies is to minimize those effects. And Omega will be world-wide because of its low frequencies, it is less susceptible.

THE MAGISTRATE: You have mentioned Omega several times, and you have never really told us what Omega is, how it works. Will you care to do so briefly?

THE WITNESS: I thought perhaps when your Honor questions me he might have some questions that he might want.

Do you want it now?

THE MAGISTRATE: Since you brought it up, tell us what Omega is. We know this vessel didn't have it. It hasn't been argued that the absence of it constitutes an unseaworthy condition, but I still like to know since it has been mentioned so many times what Omega is and how it works.

THE WITNESS: Omega -- are you acquainted with Decca?

THE MAGISTRATE: Only to the extent that it is the British equivalent of Loran.

THE WITNESS: No, it is not. Decca moved down to 100 kilocycles and is a continuous wave system and it is a hyperbolic system, the same as Loran in that respect, and you get your hyperbolic lines of

position by comparing the phase between the signals from two stations, and then you get a fix by comparing it between two other stations.

THE MAGISTRATE: Or one other station paired with it?

THE WITNESS: Yes. Therefore you are getting your lines of position by phase comparison. But the Decca, each station is on a different frequency out to its coverage and of course you can repeat those frequencies again if you put a station in the United States and one in Japan. But it takes a lot of different frequencies.

Its range is 200 miles or so, and the accuracy at the outer edges of it is about a mile. It is very precise in short ranges and ideal navigation system in close waters like the channel and the north seas and the fishing coast and so on and so forth.

We made several visits to England to study, investigate and learn more about Decca because we felt it would be a very useful aid. But again we come into the problem of the economics of installing it and the frequencies requirements and so on, so we start to look for better frequencies because standard Loran is not a very satisfactory frequency at 1900 kilocycles.

So we took the existing Loran and moved it down to 100 kilocycles to improve its performance -- accuracies, range and performance.

The Decca is located in that same general region.

Now, we then sat down and I was on a committee that was made up of Canadians and British and Americans and aviation people and said we have got about 70 different navigation systems that are in the mill here now. What is this system we would like to propose that will do the job? And we had requirements, a minimum number of stations because you don't -- can't get real estate in every country in the world, so we would like a list of them that didn't need very many stations. And we would like to go to lower frequencies as practical.

We went to 10.2 kilocycles. Now, that has advantages that we can get tremendous base line, 6,000 miles long and actually 6 or 8 stations can cover the entire world. And it is a system identical in this respect to Decca that the CW waves are phase compared, and you measure your transit along the phase by a meter.

Now, the disadvantage of this thing is the tremendous antennas required because at 10.2 kilocycles if you put up a half-wave antenna it would have to be

4 miles high.

THE MAGISTRATE: You know, Mr. McNally, your description is a little too technical for me.

As I understand the operation of Loran, I regret to say I don't know as much as I should have, despite the fact I commanded a couple of Loran stations at various times, Loran works by measuring the difference in time in microseconds of the receipt of the electronic waves from the two pairs of stations.

THE WITNESS: They are pulses.

THE MAGISTRATE: Fine. But obviously the distance you are away from them is going to make a very slight difference in the length of time it takes for the pulse to reach you, and this time differs depending upon your relative position vis-a-vis the two sending stations, and you are measuring a difference in time of receipt.

On what is Omega and Decca working?

THE WITNESS: On the same basis, except in measuring the time of arrival of the leading edge of the radio wave. The leading edge of one radio wave arrives and then the leading edge of the second one arrives.

THE MAGISTRATE: From a physical standpoint,

it is the same principle but from the standpoint of the electronic signal being measured it differs?

THE WITNESS: It uses a continuous wave instead of a pulse, and the reason thereof you can get a very narrow band width as you need a wide band width to receive pulse. So therefore you can enhance and we had to enhance this thing to keep with atmospheric noise.

Decca does the same. We have about a 25 cycle band within their newest equipment so that they can cope with the atmospheric noise.

THE MAGISTRATE: At the present time where is their Omega coverage?

THE WITNESS: The Omega coverage is not fully accredited yet, but there is a station in Norway and I think one in New York, Trinidad, one is being constructed in Australia. There would be one in Hawaii. And I think there has to be one to complete the coverage -- of course, I am not in the program now. I think there probably would be one in the Indian Ocean. No doubt.

THE MAGISTRATE: At the present time Omega is not operational for the Caribbean?

THE WITNESS: No, sir. It is not accredited yet. But the service is used because the other

advantage of this thing and which has been published, it is useful for submarines because these frequencies penetrate salt water to an appreciable and usable depth so that it is useful for a submerged submarine, surface ships as well as aircraft.

THE MAGISTRATE: I am sorry that we diverted a little bit. Go back to your cross-examination.

BY MR. KOSTER:

Q You tend to agree that reception of radio waves might be less favorable in the southern climes than in the north?

A I don't think I could agree completely that any such study was final because there again the particular conditions of the sunspot cycle, the solar cycle that extends over several years, and a host of factors that I don't believe you could get any several authorities to completely and totally agree on a specific value of propagation. They are going on all the time. Propagation studies.

Q Mr. McNally, I believe you stated you read Capt. McGinti's testimony, which is Claimant's Exhibit I.

A Yes

Q And reading from a portion of that, Capt. McGinti was asked about Loran lines in the area;

page 24. He answered: "There is a lot of interference in signals and generally we don't have too much success with Loran in this part of the ocean.

"Q Why is that?

"A I really don't know. I think it is because of the atmospheric conditions over this ocean mass. Probably something to do with frequencies. It is a common occurance on all ships that operate with Loran in this area."

Do you agree with that?

A Not completely. I think he was making a conclusion. The Loran is used in the tropics extensively. The problem comes when you are out of range of the ground wave and you are using the sky wave, and there is one thing that is interesting is that sky wave north and south is on many occasions much more pronounced than sky wave east or west. And the reason for this is that you are not transiting the twilight zone which is always a new sense in propagation. So that many times you get a much better sky wave over the north-south pass. I find this to be because of this effect that in-between you may not have a north-south line where the sunsets and the sunrise appearing. But the main point of the Loran is that at night the reception is sky

wave and the problem of sky wave reflection when you get a good sky wave, you not only get one echo from the sky, but you may get many bounces. The signal will go up and hit the sea, go up and the operator on the Loran scope will see 1, 2, 3 and sometimes even as much as 4 pulses on there. They are all from the same signal.

Q Mr. McNally, the question was: Did you agree with Capt. McGinty's testimony? I gather the answer is no.

A I agree with him in that the interference from multiple sky waves would be more pronounced if he were in a sky wave area; he would get multiple signals. That's probably what he was talking about.

Q Am I to understand that a vessel using Loran given the north-south orientation of the stronger lines would be able to fix its longitude more easily than it could fix its latitude?

A Not necessarily. Not necessarily because a position from a Loran, there is 2 stations needed to get a fix.

Q I understand. Let's assume that the lines were basically north and south, and east and west on the second station, would it be easier to set a

longitude or a latitude?

A I would not give any one more credit than the other, no.

Q To a line of position obtained by RDF, do corrections have to be made to that line?

A Yes. If the radio bearing follows a great circle path and therefore if you are in the higher latitudes and your distance is, oh, 150 miles or thereabouts, but under any circumstances you can go to the conversion correction and the conversion correction is covered in the Marconi book. It is also covered in Bowditch. It is a normal correction to be made when you are taking particularly bearings where the latitude difference is great and the longitude difference is great. Then this bearing becomes significant. It is the same old -- if you got these bearings on a great circle, you wouldn't have to make the correction. But when you got them on a Mercator chart, you have to apply the conversion correction.

Q Are radio beacons in tropical areas ever made or given stronger powers rather than as against those in the northern areas to make up for atmospheric noise in the warmer climes?

A They might be, but I couldn't say that that's

a rule to do so.

Q We mentioned a number of limitations on the effectiveness of RDF. Are these limitations, might they be cumulative? If you had night effect and land effect and rolling and pitching of the vessel, and a warmer climate and storms in the area, would those all contribute to reducing the signal, if that's the appropriate word?

A They certainly would, and the degree at which all of them may be present and that all of them may affect the bearing would certainly not be something that you could predict.

Q Didn't you attempt to predict it when you stated as a matter of your professional opinion that the radio line of position on San Andres on the night of January 26-27, 1972 would have given them something useful?

A That's right.

Q Well, in what --

A My experience is based on that I never found that I could not get a satisfactory bearing in this tropical environment at sea.

Q What to you is a satisfactory bearing?

A I would -- a satisfactory bearing depends

on the range from the hazard. When we setup the requirements for RDF in the International Aids to Marine Navigation, we stated that the requirements over 50 miles were plus or minus one percent would be satisfactory if you were within 50 miles of the nearest danger. Plus or minus one percent.

Now, certainly if you are approaching a harbor or estuary or place, as you get closer and closer, the degree of accuracy is greater than you need. But fortunately, generally that is the circumstance because the beacon is closer to your hazard.

Q Mr. McNally, you mentioned before about the fine tuner on a Marconi RDF set. Does that narrow the null period down on both sides by any equivalent amount?

MR. JACOBSEN: What do you mean by "fine tuner"?

MR. KOSTER: A filter, I am sorry.

A There are two facilities, two controls or two features; the first one being selectivity where you go from wide band to narrow band to filter, and that only enhances the signal in reference to noise, the static comes in. It makes the signal -- the signal does not have to compete with so much noise energy. In fact, it limits the amount of noise energy or reduces it, shall I say, that the signal has to compete with.

Q Well, if on the second band the signal were -- correct me if I am wrong -- say 40 degrees, and you went to the third stage, I think it would go to a lesser number of degrees?

A The ability to determine the null would improve and be narrower, and there again you are tied in with your operator's skill in determining at which side he can begin to hear a signal.

Q Would the determination of the mean of the null be the same in both cases?

A Yes. The determination of the mean, a 10 degree bearing does not at all -- a 10 degree null does not at all mean that that is suffering a 10 degree error. If you got a null extending from zero to 10 degrees, and you could with high degree of confidence say that was 5 degrees and, say, be within a half a degree.

The Marconi publications say that reliable bearings can be taken 2 plus or minus one degree. And that is the capabilities I think of this equipment within the ranges specified.

Q And subject to the variability that we have just been discussing regarding conditions and other effects and phenomena?

A Yes.

Q I believe you mentioned with respect to the ranges and so on that were listed that these were the results of propagation studies that are taken and carried out.

A Yes.

Q Would you assume them to be averages, that there would be situations where the ranges would fall underneath those established? You have already testified that there would be instances where it would be greater.

A Yes.

Q And the same with reference to the 70 mile limitation on night effect as listed on page 20 of Exhibit E; might there be instances where night effects would restrict the effectiveness of the RDF even less than 70 miles?

A I have not found that to be so, no.

Q Have you ever read, studied or read about them being reported?

A No.

MR. KOSTER: No further questions.

THE MAGISTRATE: Mr. O'Regan, do you have any further questions?

MR. O'REGAN: May I have a second, your Honor.

THE MAGISTRATE: While he is looking at that,

hcds 166 McNally -

let me ask you a question or two.

BY THE MAGISTRATE:

Q You were describing earlier the operation of the RDF in terms of revolving the loop.

A Yes.

Q And you say that acquires or brings in the null when it is pointed directly at the station?

A I want to be careful that the plane of the loop is at the station.

Q Seeing then if you revolve it 360 degrees this would occur twice?

A I would get ambiguous bearings 180 degrees apart.

Q Is it not necessary to have something on the RDF to tell you which of those two possibilities you are facing at?

A Yes, sir. You have a sense control which is -- which introduces an omni -- it is a verticle antenna. It introduces a signal which is omni-directional. That signal adds to one side of the figure eight pattern and subtracts from the other one, and if it is correctly adjusted, you then get a cardiode [heart shaped pattern].

Q I believe some of the other sets did not have that; I believe there was a serious naval disaster

because of that problem. 368

A Yes.

Q Coming up to the RDF, you spoke of the fact that you are getting ground waves in the daytime. You never get a sky wave from an RDF during the daylight?

A I could not say we never would. But the probability of a sky wave that would clash with the ground wave seriously in the daytime is very rare.

Q However, you get your night effect, then you get clashing of the sky wave and the ground wave?

A Yes.

Q If you are beyond the area of clash, which is to say you are beyond your ground wave reception, would you get only a sky wave at night?

A Right.

Q Would the sky wave at night be a longer range than the ground wave during the daytime?

A Yes.

Q Because I suggested that before and I was told that I was wrong, that the RDF reception was greater, longer in day than at night. But you are saying it is longer at night or be it not as reliable because you are dealing with sky waves?

A And sky wave is the phenomena that bothers

you is the change of polarization. 369

Q Getting off the RDF for a second, you stated earlier that you have worked with every form of electronic aid to navigation. Have you had experience with the fathometer?

A Yes, sir.

Q Do you recall from your earlier testimony that the fathometer on this vessel was of no value for navigational purposes, at last not until the last 80 seconds because its maximum range was 600 feet or fathoms and that at all times until the last 80 seconds the ship was in waters deeper than that and then there came a point possibly 20 or 30 seconds before the stranding when the captain became aware that he had been receiving fathometer returns for a about a minute earlier and indeed it passed over one shoal area already.

MR. JACOBSEN: I think the captain said from the shoal area to the stranding was 80 seconds.

THE MAGISTRATE: As I read his deposition, he viewed the entire point of reading from the very first reading to stranding as being 80 seconds.

MR. JACOBSEN: That's what I just said.

THE MAGISTRATE: He went from first reading up onto a shoal, which was fairly shallow, then he

went to deeper water, then he went up sharply onto the strand. And I take it that is 80 seconds by his estimate, and it has to be an estimate because there is no readings on the chart based on the first readings on the first shoal, not the high point of that shoal. But in any event, it is probably no more than 2 minutes either way.

But it is also apparent that he was not aware of his first fathometer return, and a minute or so passed before he became aware of it.

Is there any make of fathometer that gives any audible return when you are given a reading so as to alert you to look at your fathometer?

THE WITNESS: I do not know of any. It would be technically possible to construct one. As you would pass, when a signal was given within a given depth range, it would trigger off an alarm. It is entirely possible. But I don't know of any.

When you are in shoal waters and usually the fathometer is observed continuously.

BY THE MAGISTRATE:

Q That's apparent. Their problem was they were in shoal waters and didn't know it. Indeed, it was a problem because it was just fortuitous that within

that one-minute period the captain happened to look at the fathometer.

A One of the greatest problems I have gone to sea with many merchant skippers is that the point that they have superb navigation aids on there, but they do not have the number of people that it needs to man these aids continuously. A radar is no good just to walk up and take an occasional look at it.

In the Navy we observe and plot the radar absolutely every minute of the time.

Q But the merchant seaman, unlike the Navy, is in business to make a profit and cannot afford to have someone observe and plot a radar absolutely every minute of the day.

A I understand problems.

MR. JACOBSEN: Your Honor, if I may, on page 16 of Capt. Kerr's testimony it seems clear to me that it was 80 seconds prior to the stranding.

THE MAGISTRATE: Yes, 80 seconds from his first fathometer return until he stranded.

MR. JACOBSEN: That's what I said.

Excuse me, your Honor. It says from the fathometer readings, the bottom did not shoal until about 80 seconds until the actual stranding. The

matter at the end of the right-hand side of this piece of paper indicates he conceived for about 80 seconds prior to the stranding; is that correct? And then the answer, that's correct.

THE MAGISTRATE: That's what I meant. I took it your correction was that -- let me have the fathometer readings for a moment.

I am going to show to you Exhibit 41, and it's not a very clear tracing. However, where do you take it on this that that is the first return from the bottom? Is this a ghost over here or is this a return?

THE WITNESS: It is not a very positive picture. This looks like a ghost, beginning of a shoal right here, and then there is a period where it seems to get deep again. Then it shoals rapidly.

BY THE MAGISTRATE:

Q Doesn't it retract or was the machine turned off there?

A Yes. That probably accounts for that.

Q What, the turning it off or the retracting?

A It looks like he stranded here and then he turned it off and the stylus went back here. That's what happens when you turn it off.

THE MAGISTRATE: I better show you since you

couldn't see what he was pointing at. He believes that there is a return right here or be it the tracing is very faint and then it went into deep water and got no return, and then he reads it that you got a very sharp return and he believes it stranded at the top, and this fall away was caused by turning the fathometer off.

Off the record.

[Discussion held off the record]

THE MAGISTRATE: I interrupted your redirect. Go ahead.

REDIRECT EXAMINATION

BY MR. O'REGAN:

Q Mr. McNally, referring to the expression "night effect" again, I gather it is caused by a change of polarization?

A Yes.

Q Is this a thing which is steady or is it a passing thing throughout the night?

A It is constantly changing, and it will go through conditions of increased polarization and then normal polarization, and it may fluctuate on both sides.

Q So it is not, based on your experience with taking RDF bearings at night, it is not something

which would prevent you generally all night long? 374

A No, sir.

Q Taking accurate bearings; is that correct?

A No. And that's why you are cautioned to take a series of bearings in order to arrive at a useful bearing.

Q And that's a series of bearings when there is the presence of that night effect?

A And I don't mean bearings taken every hour. I mean bearings taken every few minutes, and stay right with it until you got a null.

Q When we talk about this period before sunrise and sunset, we are really talking about the time when this night effect, as we are calling it, is most pronounced; is that correct?

A Yes. I would like to call that the twilight effect and the other the night effect because they are pronouncedly different. The one at twilight is much more severe that you will get after darkness.

MR O'REGAN: Thank you.

THE MAGISTRATE: No further questions. We will excuse Mr. McNally. Thank you.

[Witness excused]

THE MAGISTRATE: How many more witnesses

do you have, Mr. Jacobsen?

MR. JACOBSEN: That's all, your Honor.

We also offer in evidence the Admiralty List of Radio Signals for 1972 as further evidence of the existence and operation of the radio beacon at Isla San Andres.

MR. BAILLIE: Object to it. It is not relevant at all.

MR. JACOBSEN: No change.

THE MAGISTRATE: What he is trying to cover now, Mr. Baillie, is the fact that the Radio Signal List that is in evidence is for the year 1971 and the stranding occurred in January of 1971.

MR. JACOBSEN: January, '72.

THE MAGISTRATE: January, '72. So he wants to show that to the extent that the Radio Signal List is presumptive evidence that the station was in operation. He has put in the most current Radio Signal List.

I understand your argument that this doesn't prove that at that particular night the signal was working.

MR. BAILLIE: It doesn't prove that on any particular night it was working.

THE MAGISTRATE: Or on the other hand, it

is a question of upon who the burden is.

MR. JACOBSEN: Exhibit E, the 1971 List, is before the stranding, and this is after the stranding.

THE MAGISTRATE: Will you concede that this is an authentic copy of that particular volume?

MR. BAILLIE: I have no doubt.

THE MAGISTRATE: I will allow it to be marked in evidence for such weight as it may have for the purposes for which it has been offered. That will be Exhibit BB.

xx [Cargo Claimant's Exhibit BB received in Evidence]

THE MAGISTRATE: We will resume tomorrow at 11:00 a.m.

[Time noted: 5:00 p.m.]

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

- x

In the Matter :

of the : 72 Civ. 3199 (MEF)

Complaint of IRISH SHIPPING LTD., Plaintiff, as Owner of the S.S. "IRISH SPRUCE", for exoneration from or limitation of liability. :

- x

AMERICAN SMELTING AND REFINING COMPANY, :

Plaintiff, : 72 Civ. 656 (MEF)

-against- :

S.S. IRISH SPRUCE, her engines, tackle, etc., :

-and against- :

IRISH SHIPPING LTD., :

Defendants. :

- x

April 26, 1974,
11:15 A.M.

Continued hearing before Hon. Gerard L. Goettel, United States Magistrate, at the United States Court House, Foley Square, New York, N.Y., before Leon Zuck, a Certified Shorthand Reporter and Notary Public of the State of New York.

lzh2

Appearances:

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Francis M. O'Regan, Esq., of Counsel

THE MAGISTRATE: Due to a few interruptions last night and this morning, I have not read one of the depositions, namely the deposition of Captain McGinti. I left that until last since it seemed to me the course he took bore the least resemblance to the course of the vessel we are concerned with. Therefore, I assume it has the least weight. I will read it, however, later today.

I had a question in reading two of the depositions in that they were depositions of witnesses who actually appeared and testified.

MR. BAILLIE: I explained that, your Honor, when we began. I said as far as I was concerned, I was willing to let them go in although I knew I couldn't offer them as long as the witnesses were here and Mr. Jacobsen agreed they could go in.

THE MAGISTRATE: Fine. They do seem to me to contain evidence which was not in their direct testimony although it is quite possible that they testified about the matters and I just didn't remember it.

MR. BAILLIE: You are quite right. I didn't attempt to cover everything that was in the deposition as long as they were in.

THE MAGISTRATE: Now, Mr. Baillie, what decision

have you made about the rebuttal testimony?

MR. BAILLIE: Yes, I am going to put on Mr. Gibson, please.

M I C H A E L G I B S O N, Sidmouth Road, Chelmsford, Essex, England, called as a witness, having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. BAILLIE:

Q Mr. Gibson, would you tell us what your education has been and what your training has been?

A Yes. Well, in 1949 to 1950 I attended courses and obtained the Postmaster General's first class certificate of proficiency in wireless telegraphy and also the Ministry of Transport radar maintenance certificate. From 1950 to 1956 I served on deep sea trawlers out of the port of Hull fishing in Arctic and Icelandic waters. From 1956 I attended Bolton Technical College and studied electronics, electronic engineering. I obtained the college diploma in electronics.

From 1959 to 1960 I attended the Southeast London Technical College and studied electrical technology and mathematics.

Since --

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Q By whom are you employed now?

A I am now employed by the Marconi International Marine Company.

Q When did you begin your service with Marconi?

A Well, originally in 1950 when I went to sea with them. From '50 to '56 and then, of course, I left the company for a while to go to college.

Q Slower, please, and louder.

A I left the company in 1956 to go to college and then I returned to the company in 1960 and I have been employed by them to the present time.

Q In what positions?

A Well, first I was assigned to the D.F. section in the technical department. Then in 1967 I was appointed chief of the D.F. section. I held this post up until October of last year and since then I have been chief of standardization.

Q When you were at sea, did you have occasion to use the direction finder?

A On many occasions.

Q What did you serve as at sea?

A As a radio operator.

Q And yet you say you are an employee of Marconi?

A That's correct.

Q Would you tell us about that, how that happens to be?

A Well, in the British Merchant Marine and on most of the fishing fleets there, it is common practice for ship owners to hire radio operators, I suppose you could say, from Marconi, and one or two other similar companies.

Q You say hire from them. Do you become an employee of the ship owner?

A Not really, no. I remain, I would remain an employee of the Marine Radio Company but they would be charging the ship owner a certain fee for my services.

Q You are familiar, of course, with the Marconi direction finder equipment?

A Yes, indeed.

Q And I don't think we need to go into its quality because we have had that explained already. And I, of course, appreciate that you haven't in your training mentioned anything about a medical degree. But you can't testify along the lines suggested by his Honor that perhaps one's hearing becomes less acute as one gets older. I find it a little difficult to accept this myself since I am approaching 63. But purely from an operational standpoint, and assuming somebody's hearing

should have become impaired in some fashion, is there any way that you can, at least in part, compensate for this on the equipment, by the use of equipment?

A Oh, yes. One could turn up the gain.

Q And what effect does that have?

A Well, that increases the volume of sound which is put out on a given signal.

Q The question was raised about the adequacy of certain information about an aero radio beacon. I want you to assume that the information -- this information is available to a would be operator of a direction finder at sea. One, that an aero radio beacon in the first place exists. Two, where it exists geographically. Three, the call sign, and four, the frequency.

Is this data, in your opinion, sufficient for a would be direction finder operator to put a vessel's direction finder in operation and obtain therefrom useful information if, of course, the sending station is on and transmitting and atmospheric conditions do not interfere?

A Yes, indeed.

Q Would you explain your answer.

A Well, in order to take a D.F. bearing on a

radio beacon, one wants to know, first of all, the frequency so that one can tune the set in. And secondly, one wants to know the call sign of the station so one can identify that one has the desired signal. Now, if the signal is of sufficient strength to be usable in that area, then one will hear it on the equipment and one can then proceed to take the bearing.

Q We also had testimony of one never failing to get an adequate bearing from a direction finder. What's been your experience? What was your experience while you were at sea, I should say?

A Well, my experience is that I have met on many occasions where I found it impossible to obtain direction finder bearings. This was due to atmospheric noise. Also due to the effects of night effect which have obscured the zero to such an extent that it had not been possible to obtain, to determine where the position of the null is because there was no null to speak of at all.

Q To your knowledge, Mr. Gibson, is there a difference in atmospheric noise as one proceeds south in the northern hemisphere and north in the southern hemisphere and if so, what is that difference?

A Well, yes, there is. Generally speaking

atmospheric noise increases as you go south in the northern hemisphere, as you say, and north in the southern hemisphere, as you get nearer to the equator.

Q Is anything done to compensate this with such equipment as beacons and so on?

A Yes, it is. It is the practice with radio beacons which are set up, to be set up in such a way as to provide a field strength of 50 microvolts per meter at the edge of their nominal range and this is in latitudes north of 43 north.

In latitudes below that, signal strengths of 75 microvolts per meter and 100 microvolts per meter are provided in order to counteract the effects of these higher levels of atmospheric noise.

Q Does the fact that the San Andres aero beacon, aero radio beacon is listed as having a 1 kilowatt power, is this anything to do with what you have been talking about?

A Well, just the fact that it's got 1 kilowatt power doesn't relate to this particular effect on its own.

Q We have been talking here or we have, rather, I'm sorry, we have photographs of the Lodestone, the Marconi Lodestone direction finder.

MR. BAILLIE: Can we have that exhibit, I believe it is K.

Q Is that the Lodestone?

A Yes, this is a picture of the Lodestone direction finder.

Q Is there any difference between the Lodestone and the Lodestar?

A Yes, indeed. The Lodestar is a later model of the direction finder.

Q Have you prepared at my request -- we do not have a photograph here, your Honor -- a sketch of the console of that Lodestar?

A Yes, sir. That is my sketch of a Lodestar.

Q On the Lodestar, is there any control marked "filter"?

A No, sir, there is not.

Q What in the Lodestar is analogous to a filter in the Lodestone?

A Well, the analogous control on the Lodestar would be the manual bandwidth control or bandwidth control which is operative in manual, and this is marked wide and narrow.

THE MAGISTRATE: Mr. Baillie, may I stop you for a moment. Unfortunately the similarity of names has

confused me. Which type did the Spruce have, the Lodestar or the Lodestone?

MR. BAILLIE: The Lodestone.

THE MAGISTRATE: The diagram he has drawn here has to do with a later model which was not on the Spruce?

MR. BAILLIE: It was not on the Spruce. What I am going to show by calling Captain Cushman back is he had the Lodes' r to work with.

THE MAGISTRATE: What will that establish?

MR. BAILLIE: There was no filter, of which it was made a point in his cross-examination.

THE MAGISTRATE: Captain Cushman did not get readings in either event, so what do we establish --

MR. BAILLIE: I want to establish that he used the best control for getting such readings.

The implication was left that he had not turned to filter, which would give you the best picture or whatever one obtains.

THE MAGISTRATE: The set he was using did not have something denominated a filter --

MR. BAILLIE: That's right. He said he couldn't remember whether there was anything designated filter.

THE MAGISTRATE: And that he used equipment,

if anything, better than the equipment on the Spruce?

MR. BAILLIE: I frankly don't know whether it is better. We will ask the witness.

Q Can you explain what the difference in the two controls are, the control in the Lodestone and Lodestar?

A Yes. In the case of the Lodestone equipment, the bandwidth control is a three-position control providing bandwidths of 2.3, 1.5 kilohertz and 150 hertz. In the case of the Lodestar, the manual bandwidth control there provides two bandwidths of about 3 kilohertz and about 800 hertz.

Q Is there a major difference between the Lodestone and the Lodestar with respect to the ability to manually obtain bearings?

A Well, to the extent that the -- that there is a narrower bandwidth available on the Lodestone, one might argue that this is somewhat better. However, in practice with Lodestar equipment, this is an advance on the Lodestone and doesn't suffer any disadvantage, noticeable disadvantage in this respect. It is quite adequate for the marine usage and meets all the marine requirements.

MR. BAILLIE: May I have the sketch marked,

your Honor.

THE MAGISTRATE: Any objection?

MR. JACOBSEN: No objection.

THE MAGISTRATE: Are you offering it in evidence?

MR. BAILLIE: I will offer it in evidence.

THE MAGISTRATE: What is your next number?

MR. BAILLIE: 73.

THE MAGISTRATE: The reporter may mark it in evidence as Plaintiff's Exhibit 73.

(Sketch, Plaintiff's Exhibit 73, received in evidence.)

xx

Q Why, Mr. Gibson, if it is true, is it difficult to get a good reading when your null extends over a wide arc?

A Well, if you have a very wide null point, it is difficult to determine the edges of the null. It is more difficult than it is when the null is less wide. The narrower the null is, the easier it is, in general, to fix with precision just where the edge of the null is.

Q When the brochure talks about an error for the Lodestone of 1 to 2 degrees, under what conditions does that refer to?

A Well, this would refer to good conditions, of course. Naturally enough, the Lodestone direction finder, in common with all direction finders, would not achieve such accuracy when conditions were such as to degrade the performance, such as under conditions of night effect, atmospheric noise, weak signal, interference signals and so on.

MR. BAILLIE: I have nothing further.

THE MAGISTRATE: Cross-examination.

MR. JACOBSEN: Could we have a two-minute recess, your Honor?

THE MAGISTRATE: Surely.

(Recess.)

THE MAGISTRATE: Proceed.

CROSS-EXAMINATION

BY MR. O'REGAN:

Q Mr. Gibson, I'm referring now to Exhibit K-2, which is entitled The Marine Radio Direction Finder. It is published by Marconi International Marine and Communication Company, Limited.

On page 2 of this document, the following statement appears:

"The Marine Radio Direction Finder is, generally, unaffected by weather conditions, and in heavy seas when

a vessel may be yawing and rolling the methods described herein enable usefully accurate observations to be obtained."

Do you agree with that statement in conjunction with the Lodestone Mark IV?

A I would agree with it generally but not in certain particulars.

Q What I read to you says the word generally. Do you agree with that?

A Generally.

Q That was in the sentence I read to you. So you do agree with the statement?

A Generally, yes.

Q Do you also agree with the statement which appears on page 3:

"In general, the intelligent use of W/T direction finding can modify considerably the extremely adverse effect on navigation caused by fog and bad weather, and can contribute, often appreciably towards safety."

Do you agree with that statement?

A I do, yes.

Q Do you also agree with this statement which appears on the same page:

"Satisfactory bearings can be obtained despite considerable rolling and yawing, provided care is taken in observing the procedure laid down here."

Do you agree with that statement?

A Yes, I do.

Q On page 11 of the same document, the following statement appears:

"The range of the wireless direction finder as fitted on board ship may be taken as 100 miles for the purposes of practical navigation. This range is based upon the conditions of marine navigation and not on the electrical powers of the instrument, although the greater the distance the more chances there are of the wireless wave being distorted during its transit from the sending to the receiving station.

"In spite of the foregoing, the distance over which accurate bearings can be taken under normal conditions is very much greater than the 100 miles mentioned.

"Under conditions when a ship has been without sights for several days, a long distance fix by wireless would probably be very useful for providing a good check on the 'dead reckoning'. It is possible to take bearings

from powerful stations from very considerable distances (500 miles or more), and in the event of it being decided to make use of the direction finder for obtaining a fix under such condition, there is no difficulty in doing so provided special care is taken over the observations."

Is that also a correct statement?

A I don't feel qualified to offer a judgment on whether a particular direction bearing is useful for navigational purposes since I have no personal experience of navigating a ship.

Q You have never used, in your experience you have never used radar direction finding equipment for purposes of navigation?

A That's correct.

Q Would a station with a power output of 0.025 kilowatts be considered a powerful station?

A I would judge it to be a fairly low power station.

Q What about a station of an output power of 0.3 kilowatts?

A .3 kilowatts? Again I would say this was low to medium power.

Q What about 0.5?

A .5 kilowatts?

Q Yes.

A This is say medium powered.

Q What about a station of 1.0 kilowatts?

A Well, this is medium to above medium power.

Q It would be considered fairly powerful, would it not?

A Well, it depends what context you are looking at it in. If you are talking in terms of -- it depends what kind of beacons we are talking about. In terms of aero beacons, it is not such a great power. But if we are talking in terms of marine beacons, then it is relatively powerful.

Q What would be the difference between the aero beacon and the marine beacon in this context?

A Well, the main difference in aero beacons and marine beacons is the usage. The purpose for which they are set up and the main usage.

Q I see. So what you are telling us, as I understand it, for purposes of a beacon being used by aircraft, a 1.0 kilowatt beacon would be considered weak?

A I didn't say that.

Q I beg your pardon, medium. But for purposes of

marine navigation a 1.0 kilowatt station would be considered powerful, is that correct?

A Relatively so.

MR. O'REGAN: No further questions.

MR. BAILLIE: Thank you, Mr. Gibson.

THE MAGISTRATE: I have a few questions.

BY THE MAGISTRATE:

Q If an aero beacon is located on a small island surrounded by a large body of water, will it be as helpful for navigational purposes as a marine beacon of similar strength?

A Yes, I would expect it to be so. In the normal case.

Q You were speaking earlier about the ability to compensate for hearing loss by stepping up the gain in RDF equipment. Is there any way that the equipment can compensate for losses in auditory discrimination?

A Not that I am aware of.

Q Is auditory discrimination, the ability to determine where the null begins and ends, important in using the RDF equipment?

A I would say that it is in determining the null, yes.

Q Are you familiar with the RDF equipment

used aboard U.S. line vessels, particularly the RCA equipment?

A I am not, no.

Q Do you have any reason to believe that the RDF equipment manufactured in the United States is superior to your Marconi equipment?

A No, your Honor.

Q There have been a number of depositions put in evidence by masters of U.S. line vessels in which they indicated an ability to obtain RDF bearings using, I believe, RCA equipment in all instances but I'm not certain. But certainly American made RDF equipment in areas in which two Irish vessels using Marconi equipment, contended they were unable to get reliable bearings.

MR. BAILLIE: One, your Honor.

THE MAGISTRATE: Mr. Cushman was one and the master of the --

MR. JACOBSEN: Your Honor, we have just been handed yesterday the log from Captain McMahon's testimony and he was on the same ship, the Irish Elm, that Captain Cushman was on board. It's the same vessel.

THE MAGISTRATE: Same vessel. Two different voyages. Two different people. I don't think we can

assume that it was the same equipment in both instances, can we?

MR. JACOBSEN: I would think so.

THE MAGISTRATE: Also, if I recall Captain McMahon's testimony, while he testified in Florida about one voyage when he attempted to take readings, he stated that generally speaking, and on other vessels, I think the Irish Stardust and the Irish something else, he had not been able to get reliable bearings, RDF bearings in this area.

Well, be it one Marconi set or more, two or more people have stated that at least at nighttime in the areas that we are concerned with, which is to say, between Quita Sueno Bank and Roncador Bank and Serrana Bank, they were unable to get reliable bearings on their Marconi equipment while the U.S. mariners were getting what they believed to be reliable bearings on their equipment. Assuming all this testimony to be true, would you attribute these results to be in any way due to the difference in equipment being used?

A I would not.

Q I had a feeling you would say that.

You spoke of night effects. Is night effect a phenomenon primarily of the twilight hours?

A It is the name given to polarization errors which occur at night during the hours of darkness. They are greatest around about sunrise and sunset but they are liable to occur and do occur all night long.

Q Relatively speaking, how severe would they be at midnight as compared to at sunrise or sunset under ordinary experience?

A Well, this is very difficult to say, your Honor. Certainly at sunrise and sunset the variability is greatest, though the actual strength of the sky waves involved might not be too dissimilar to what one would experience later on in the course of the night.

Q The night effect is due primarily to an ionospheric disturbance?

A It is.

Q That is greatest, as I understand it, when the sun is setting or rising?

A Well, it is most variable at that time.

Q You almost always experience it at that time and you may or may not experience it during the middle of the night, is that correct?

A Yes, I think that -- well, that is generally correct.

THE MAGISTRATE: I have no further questions.

MR. O'REGAN: Your Honor, may I ask one question following up that line?

THE MAGISTRATE: Surely.

BY MR. O'REGAN:

Q Is it true in your opinion that even around the time of sunrise and sunset errors which may occur in the use of RDF equipment would not be likely to exceed, not even at sunrise and sunset, would not be likely to exceed 3 degrees?

A The error that you can get on occasion might exceed that 3 degrees by a considerable amount.

Q Then you disagree with the statement in your Marconi publication, K-2, which appears on page 12 which states:

"Conditions over which we have no control cause distortion of wireless waves during the period of about one hour before and after sunrise and sunset. Errors which may possibly be considerable, and in varying directions, may be found during these periods, and although such errors are not likely to exceed 3 degrees, it is very improbable that they will be absent altogether, therefore bearings obtained by direction finder during these periods should be accepted with reserve."

Do you disagree with that statement?

A It says "Not likely." It doesn't say "Never."

Q I didn't ask you that.

A I agree with the statement that it can.

MR. O'REGAN: That is all.

THE MAGISTRATE: All right, Mr. Gibson. You are excused. Thank you very much.

(Witness excused.)

THE MAGISTRATE: Anything further, Mr. Baillie?

MR. BAILLIE: Yes, I should like to call Captain Cushman back, please.

THE MAGISTRATE: Captain Cushman, you are still under oath. Please resume the stand.

A U S T I N D. C U S H M A N, JR., resumed.

DIRECT EXAMINATION

BY MR. BAILLIE:

Q Captain, I ask you to look at the sketch in front of you, Plaintiff's Exhibit 73, and tell me whether or not that depicts, correctly depicts the console of the direction finder that you were using on the Irish Elm?

A To the best of my recollection, it does, sir.

Q What control were you using to narrow the band?

A I was using the control on the right-hand side of the set that is so marked, bandwidth control for manual use only.

Q Captain, there is one more thing I want to ask you with respect to a suggestion by Captain Patterson. You have previously examined Plaintiff's Exhibit 56, have you not?

A Yes, sir, I have.

Q Well now, having that plot before you, can you give me some idea as to when you could reasonably come to the conclusion that the object brought in on the radar was stationary or almost so?

A I believe that you could quite accurately or within reasonable accuracy at the end of 30 minutes determine the approaching speed, relative approaching speed of your target.

Q And we assume, as it's been testified to, that the speed of the vessel was 14.5 knots, of course.

A Yes, sir.

Q Now, as the plot indicates, it was some 29½ minutes later that the vessel stranded.

A Yes, sir.

Q Examining the chart that was in use, I think it is Exhibit 6, do you consider that the vessel would

still have had a chance at that time to turn north as Captain Patterson suggested and avoid the stranding?

A At 29½ minutes prior to this --

Q That's right.

A Yes, sir, I think that 29½ minutes prior to the actual stranding had the course been altered northward, possibly a little east of north, he would quite definitely avoided the strand.

MR. BAILLIE: Thank you. That is all.

THE MAGISTRATE: Cross-examination?

MR. JACOBSEN: No questions.

THE MAGISTRATE: You are excused, Captain.

(Witness excused.)

THE MAGISTRATE: Anything further, Mr. Baillie?

MR. BAILLIE: I would like to call Captain Kelly back to explain something that your Honor was-- had a question about, the compasses of the Irish Spruce.

THE MAGISTRATE: Whether the gyros checked after the stranding?

MR. BAILLIE: That and also whether or not the -- there is a possibility of an error in the automatic pilot in addition to whatever error there was in the gyro.

THE MAGISTRATE: My recollection was, however,

that I was suggesting that the error that was in the gyro was not necessarily in the automatic pilot. And that to correct for the error in the gyro may have conflicted an error on the pilot that didn't exist.

MR. BAILLIE: Fine.

THE MAGISTRATE: You are still under oath, Captain Kelly, have a seat.

J A M E S F. K E L L Y, resumed.

DIRECT EXAMINATION

BY MR. BAILLIE:

Q Captain, you heard his Honor's question. Can you answer that for him?

A Yes. Basically the automatic pilot on the Irish Spruce was an Arkas unit. On the monkey island of the ship there was a standard steering compass and a gyro repeater alongside of it. There was no wing gyro repeaters. Directly underneath this was a steering magnetic compass, a gyro and the auto pilot. It was common practice while checking the compasses, the gyro and the magnetic compass, to check the auto pilot at the same time for the same reading.

Q Was there a check made on the compasses after the stranding?

A Yes, there was.

Q Do they show up in this book, Exhibit 39?

A They don't, no. There was an azimuth taken during my watch by the junior officer on watch which got 1 degree low.

Q What watch are you referring to?

A The previous evening watch.

Q But they do not -- there is no record of any azimuths taken thereafter?

A There were only ones taken after the gyro compass was shut down.

THE MAGISTRATE: I didn't understand that. Did you say you shut down your gyro once you stranded?

THE WITNESS: After we stranded.

THE MAGISTRATE: You never turned it back on to test it?

THE WITNESS: No.

MR. BAILLIE: That is all.

THE MAGISTRATE: I have some questions of Captain Kelly based not on his testimony here but based on his deposition I read last night.

BY THE MAGISTRATE:

Q Unless I misunderstood your deposition testimony I now get the impression that you did get a

few star sights on the mid watch of the night prior to the stranding before you lost your horizon, is that correct?

A While I was taking them, it started to rain and the horizon got fuzzy.

Q But before that occurred, did you actually record a couple of readings? Your deposition testimony seems to say you did. Maybe I can refresh your recollection from it.

MR. JACOBSEN: Page 46.

Q Yes, on page 46 the question:

"Do you recall whether on the 1600 to 2000 watch on January 26th any celestial observations were made?

"A Yes. I took three and as I was just about getting the last one, the skies opened and it started to rain. Also it was getting very fuzzy on the horizon and in my estimation the stars were not worth looking at so I did not."

MR. JACOBSEN: There is another question, your Honor.

Q The next question:

"Was it the rain that caused the fuzzy horizon?

"A Yes."

I am not certain what you mean at the end of the first answer when you said "so I did not." Does that mean that you did not bother to plot them or that you did not bother to continue attempting to take them?

A I had worked out seven stars to use from the sight reduction tables and I had started to take them and I was looking up towards where the rain was coming from and by the time I got the second or third one, I can't remember now, the rain was a downpour so I didn't think the stars were in actual fact worth using.

Q According to this, you did get readings on three stars. Did you plot the three stars that you had taken?

A No. No, your Honor.

Q Did you keep the recordings or did anyone else keep the recordings that you made?

A No, your Honor. I think I made them on a sheet of paper.

Q And you discarded it later?

A Yes.

Q Don't you think that three stars were better than no stars?

A Well, in the circumstances prevailing at the time, I didn't.

Q The noon fix was based upon a single apparent noon reading of the sun plus an advanced sun line. Would you not think that three star readings would be more accurate than a noon position?

A I do.

Q You were not on the bridge at the time the midnight change of course was made, were you?

A No, your Honor. I was in my bunk.

Q You were not, therefore, consulted about making the midnight course change, were you?

A No, your Honor.

THE MAGISTRATE: May I have the ship's chart.

MR. BAILLIE: Which one, your Honor.

THE COURT: The major one used for plotting up.

MR. BAILLIE: You mean the smaller scale one?

THE MAGISTRATE: Whichever one has the midnight change of course.

MR. BAILLIE: That one has it.

Q Now, this chart here starts right about the 2000 watch, is that what we have there?

A All right.

Q If you recall, the original plotted course called for a more northerly course passing between these two banks and that course had to be altered because of rolling seas earlier in the day.

A That's right.

Q So that when you came up on Roncador Bank, you were coming in from a more easterly position. Do you know who plotted this dead reckoning course through the banks?

A Just a second. Mr. Healy plotted the course.

MR. JACOBSEN: Which line are you referring to?

THE MAGISTRATE: I'm referring to the dead reckoning course plotted all the way up off the chart.

Q You will note that one of the effects of the changes of the projected course is that instead of coming up with the broadest expanse between these two banks, Serrana and Quita, that in fact it is diagonally across, bringing the course's track closer to both Roncador and to Quita Sueno?

A Yes.

Q This meant you were running closer to two dangerous banks?

A Yes, your Honor.

Q Indeed the only advantage to taking this track was the possibility of picking up one of these various lights, is that correct?

A That's correct.

Q And the chart, I believe, notices that certain of the lights on this chart have been reported irregular or unreliable, is that not so?

A Yes, your Honor.

Q And I believe that none of these three banks involved here have any human habitation. Consequently, we must assume that all three lights are unmanned?

A Yes, your Honor.

Q Which, of course, increases greatly the possibility of a light being out of operation?

A Yes, your Honor.

Q As a master mariner and as the person responsible for taking the ship's celestial observations, had you been on the bridge at midnight and had you been consulted about the fact that Roncador light had not been picked up with the result that you really had no departure point for going between these two dangerous shoals -- would you agree with me they are dangerous shoals?

A Yes, your Honor.

Q Indeed, there are a number of wrecks on Quita Sueno Bank, are there not?

A Yes, sir.

Q Had you been consulted at midnight, all the conditions being as they were at that time, what advice would you have given about navigating the vessel on from that point? Keeping in mind that you had no star fix in the mid watch, that your last fix was merely a noon position, that you did not know that there was an RDF beacon around and were not using it. That the aids to navigation on these three banks were known to be of low illumination and of low altitude so they gave poor radar returns. What would you have done had you been asked by the captain at midnight what your advice would have been about navigating the vessel?

A I think myself I would be inclined to either stop the vessel there and then to reduce speed or to head on a more northerly course.

THE MAGISTRATE: Thank you.

CROSS-EXAMINATION

BY MR. JACOBSEN:

Q Captain Kelly, referring to Exhibit 6, the chart in use there and that projected course up past

Quita Sueno Bank and Serrana, you indicated that Second Officer Healy drew in the line there, the course line? Did you?

A This is the course line up here. That's his handwriting there.

Q Would he be the one that drew the line there?

A That's my D.R. there. And this one here coming up to here is my handwriting. This is my handwriting.

Q But that projected course, you say, was drawn by Mr. Healy or can you tell?

A The handwriting is --

Q On his watch the handwriting is Mr. Healy's, is that what you are saying?

A Yes. This is Mr. Healy's handwriting.

Q Whoever drew the line through up there would have drawn it under the supervision of Captain Kerr, I take it?

A Yes. It would have been according to Captain Kerr's wishes.

Q Going back to your star sights, page 46, you say yes, I took three and as I was just about getting the last one, the skies opened. So I take it, it was actually raining where you were on the ship at the time you took the third one, is that your interpretation?

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A Yes, sir.

Q Now, you say the horizon was getting very fuzzy. Was it fuzzy during the time you took the first two star sights?

A From what I can recall, I took the star sights in the direction in which the rain was coming from. Now, it was at twilight. I did not realize at the time that the rain was coming towards me until it actually started to fall.

Q And that rain would have obscured the horizon to some extent, would it not?

A Yes.

Q Referring to the caution in the 1970 edition of The Pilot, Exhibit D, are you familiar with that caution at Quita Sueno Bank?

A Yes.

Q About the, for vessels passing eastward of Quita Sueno Bank to watch out for a strong set to the west.

MR. BAILLIE: Is that exactly what it says, Mr. Jacobsen? I don't think so.

MR. JACOBSEN: I will read it. It says "Current. Caution. Caution should be exercised when passing eastward of Quita Sueno Bank as the current here

sets strongly to the westward and on the bank."

Q Under the condition like you had on the Irish Spruce on the night of January 26th, 27th, 1972, if you had been aware of a caution like this, would that have influenced any decision you made in proceeding north between Quita Sueno Bank and Serrana Bank?

A But the decision wasn't mine.

Q I understand that. I understand that.

A The Pilot book we had showed strong westerly to northwesterly sets and there is an indication on the chart here of a northwesterly current as well. I don't think it would have made any difference.

Q Are you sure that The Pilot you had showed a westerly turn in the vicinity of Quita Sueno Bank?

A It was between west and northwest.

Q The chart you have here has an arrow that is northwest, isn't it?

A Northwesterly, yes.

Q So my question is, would you have taken cognizance of a caution about the one I just read you, would you have taken cognizance of that caution in the vicinity of Quita Sueno Bank under the circumstances of proceeding north as the Judge asked you?

A With the knowledge I have, I don't think it

would have made any difference. 414

Q You don't think that this would have contributed any information to you to help you in navigating through those dangerous shoals?

A No. To me that refers to very close to this bank.

Q Yes, but isn't this caution in a book and pilot that's used by ocean going vessels?

A It is.

Q And doesn't it indicate to you that when you are passing eastward of Quita Sueno Bank, that this would take into consideration all the areas of Quita Sueno Bank over to Serrana?

A No. It also says elsewhere in that book that the currents are very variable in this area and sets to the eastward are also known, not in that one, in the other one there.

Q But don't you think that this is a caution for passing traffic, traffic going between Serrana and Quita Sueno Bank?

A No, I think it is for somebody running up fairly close parallel to the reef. In most areas currents set directly right across the reef.

Q Who would be running closing to the reef?

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A I don't know. Fishermen. There is a lot of fishermen when we were on the reef here we could see fishing boats in this area.

Q So you don't think that this caution is for ocean going vessels that are keeping off the reef?

A I think it is a general caution to all seamen.

Q To all seamen?

A Yes.

MR. JACOBSEN: No further questions.

THE MAGISTRATE: You are excused.

(Witness excused.)

THE MAGISTRATE: Do you have any further evidence?

MR. BAILLIE: No.

MR. JACOBSEN: Yes, your Honor, we have this log.

MR. O'REGAN: We have one thing, your Honor. It is the log of the Irish Elm which was just given to us during the trial here. It has to do with the testimony which was taken of Captain McMahon in Vancouver. The log wasn't available at that time and Mr. Costa produced it for us. I would like to make that a part of Captain McMahon's testimony at this time. It consists of six pages and has to do with his trip in July, 1972.

THE MAGISTRATE: Any objection to that?

MR. BAILLIE: No, your Honor.

THE MAGISTRATE: Put it in the exhibits.

I did have a few more questions of the navigator based on his deposition which I read last night for the first time.

MR. BAILLIE: Mr. Healy?

THE MAGISTRATE: Yes.

Mr. Healy, you are still under oath.

F R A N C I S E. H E A L Y, resumed.

BY THE MAGISTRATE:

Q Mr. Healy, referring to your deposition testimony, page 13 and 14. I want to read you a question just to refresh you as to what I am interested in.

"Q Can you tell us what happened between the time the course change was made at 2400, when you came on the bridge approximately; what happened between that and the time when you stranded, anything?

"A Shortly after midnight I continued to search for the light on Roncador but nothing turned up. There were a lot of rain squalls around during the watch. The sky was fairly clear with a little cloud. The moon was shining fairly good up to about 3 o'clock. From there

on it clouded over. We picked up on the radar a strong echo and I think, if I recall rightly, it was at seven minutes past 2, and we thought at first this echo may actually be the echo of the radar conspicuous wreck marked on the chart at Quita Sueno. A bearing and a distance of that echo gave a position of the vessel quite close to the track line. However, after a few minutes this echo had disappeared, and we assumed it must have been a rain squall. At half past 2 we picked up an echo 15½ degrees on the starboard bow and it was plotted on the radar. This is where this plot here begins."

You spoke of this first radar target as being close to the track line. By the track line are you referring to your D.R. or to your heading?

A I am referring to the D.R.

Q That is this D.R. line which appears here on Exhibit 6 running from latitude 1335 on the east and then running off the chart up around longitude 8230?

A Yes, that's correct.

Q At what range did you first get that target?

A I think it was something like 34 miles.

Q Can you show me approximately where that would be on this chart on your D.R.? In other words, where you

thought you had the target?

A Yes, I have the position marked here at 0207.

Q That is your 0207 position?

A That's the 0207.

Q And you believe that the target was 34 miles away?

A If I could have a dividers to check it with. Yes, your Honor, 34 miles.

Q Show me where that would have been, where you thought it was when you -- based on your D.R. at that time?

A I reckoned the D.R. was this position I had marked here on the track line as D.R. 0200. Laying off a bearing and distance of the echo on the radar gives this position here for 0207. A little bit to the south westward of the D.R. position for 0200.

Q Where would this target 34 miles away have been?

A It would have been on the port bow.

Q Would you plot where you think it was when you picked it up based on your D.R.? Do you follow what I am asking you?

A Not quite, your Honor, no.

Q Well, you believed this was your D.R. position 0207.

A No, that's the position I obtained when laying off a bearing and distance of the object on the radar.

Q That is based on the object?

A Yes.

Q Assume that the object was the wreck.

A And assuming that the object was the wreck.

MR. JACOBSEN: Referring to Exhibit 56.

Q That is fairly close to your D.R. track?

MR. BAILLIE: No, he is referring to his previous indication.

Q Will you do this for me. Will you take your position at wreck and dead reckoning yourself back to what you now believe to be your actual 0207 position? Do you understand what I am asking of you?

A I think I do, your Honor.

I think what you have in mind, your Honor, is this, that knowing that we ended up ashore in a position approximately here in actual fact--

Q Yes, compute where in fact you probably were at 0207.

A Laying off this course here of 323 degrees. 0207 is about a little less than an hour and a half from --

Q Approximately 20 miles.

A I will allow 20 miles. 20 miles southeastward

along that course line gives me a position right here.

Q So if in fact you had a target at 0207, 34 miles on your port bow, it would have had to have been on the other side of Quita Sueno Bank?

A Yes, sir, it would.

Q Now, you came on the bridge at midnight and you testified in your deposition that the course change from 330 to 323 had already been made, is that correct?

A Yes,your Honor.

Q Who decided to make that course change?

A To my recollection, it was the captain's decision.

Q If you were not there at the time it was made, you can't be sure who made the decision, can you?

A Well, I am assuming because when I arrived on the bridge at midnight, both the third mate and the captain were on the bridge at that time and the course change had just been made. Thus, the course change was made in the presence of the captain. Therefore, I am assuming that at least he approved of it.

Q Were you consulted in any way whatever about making the course change at that time?

A The course change had already been made at that

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time.

Q Were you consulted at all about continuing on that 323 course despite the fact that Roncador light had not been picked up?

A Yes, I was.

Q Who consulted you about it?

A The captain.

Q What did the captain say to you and what did you say to him?

A I can't remember the exact words but the general discussion was, I ascertained from him that the lights on Roncador had not been seen, that no radar return had been received from Roncador and that the course, although I would have normally expected it would have been altered around 2300, had not been altered until just at 2400 hours.

Q You are telling us what occurred. You are not telling us any conversation you and the captain had.

A Well, I can't remember the exact conversation but the conversation would have been the conversation necessary for me to ascertain this information from the captain.

Q He was simply telling you what had been done, is that correct?

A That's correct.

Q He didn't ask your opinion about the wisdom of doing it under all the circumstances that then existed?

A I don't recall him asking me for my opinion on whether I thought it wise or not.

Q Did you in fact have an opinion at that time?

A Yes, I did, your Honor.

Q What was your opinion?

A My opinion was that it was okay.

Q The distance between Quita Sueno and Serrana Banks are how much?

A Approximately 43 miles.

Q Consequently, it is possible that you track yourself on a northerly course up between them to keep at least 20 miles from each?

A That's correct.

Q However, the course that you had tracked came within how many miles of Quita Sueno?

A At its nearest approach, that is, to the lighthouse on the northern tip, it came about seven miles.

Q Did you take any notice of the caution on the chart about the fact that certain of the lights on the chart have been reported irregular and unavailable?

A It has been my experience before that these lights are rather dim and unrealiable.

Q And moreover, as unmanned lights, you run the possibility that they will not be in operation at all?

A That's correct, your Honor.

Q Considering the fact that the vessel's fix was a noon position based on an advanced sun line, and that you had been D.R.ing at that point for 12 hours in waters known to have reasonably severe currents and that you had been compelled by the weather to make several unexpected course changes, do you consider it an act of prudent navigation to at midnight have continued at full sea speed on the heading which the captain selected?

A At the time in question, I thought it prudent. Obviously I now know that it was not.

Q You have heard the opinions of two expert witnesses, one more unequivocal than the other, but one relatively unequivocal and the other conditioned a bit, but both of them suggesting that prudent navigation required at midnight taking other courses, the very least of which would have been to have attempted to split these two banks more up the middle so as to cut down the possibility of stranding on one. You heard

that testimony?

A Yes, I heard that testimony.

Q Having heard their opinions but not taking into account what actually developed which, of course, hindsight always sharpens your judgment, just taking their opinions into account, do you still believe it was an act of prudent navigation for the captain to have continued on the course 323 true after midnight when he had not picked up any navigational aids?

A I now believe that it was not prudent to continue to proceed.

THE MAGISTRATE: No further questions.

MR. BAILLIE: That is all.

THE MAGISTRATE: Do you want to examine the witness at all?

MR. BAILLIE: Your Honor, I object to any further cross.

THE MAGISTRATE: I think it is proper because I have introduced a new line of testimony which would be unfair to Mr. Jacobsen. I have been examining your witness for you.

BY MR. JACOBSEN:

Q You say you think now it wasn't prudent. You said it was prudent at the time. You think at the

time it was prudent with respect to the tools that-- the information that the captain had in hand?

A Yes, I thought it prudent at the time.

Q And that it was prudent for the captain with respect to the information he had in hand?

A Yes, I did.

THE MAGISTRATE: There is one area of questioning I accidentally omitted. I missed one of my paper clips.

BY THE MAGISTRATE:

Q Let me read you a bit more of your deposition testimony. This is from page 27.

"Q Why did you not go back to the direction finder; did you forget about it, or what? You said you did not return to the direction finder after you had turned it on?

"A That is correct, sir. The first time I tried to use it I got nothing but static. I do not know. I just never returned to it.

That is the end of the question and answer.

I take it when you first went on watch at midnight, you made an attempt to locate stations just by dial twisting and going around the dial, seeing if you picked up any signals, is that correct?

A I don't think so, your Honor, no.

Q What did you do?

A As far as I recall, what I tried to get was to receive a signal from Swan Island.

Q That was the only one you attempted to receive?

A That was the only one I attempted to receive.

Q You did not attempt to receive San Andres because you were unaware of the fact there was a beacon there, is that correct?

A That's correct.

Q Has it been your experience in operating a radio direction finder that if you know the approximate bearing of the signal you are looking for, it is more easy to find it than if you are merely making a sweep attempting to pick up any signals that happened to be in the area?

A It certainly helps if you have a general idea of where you expect the bearing will be.

THE MAGISTRATE: I have no further questions.

MR. BAILLIE: Thank you, Mr. Healy.

(Witness excused.)

MR. BAILLIE: We have nothing further.

MR. JACOBSEN: Your Honor, if it won't burden the Court, I would like to make a two-minute closing

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statement.

MR. BAILLIE: I assume your Honor wants briefs.

THE MAGISTRATE: I do, but I won't stop you from making a closing. I will have a few remarks to you in the way of what I want by way of closing briefs.

MR. JACOBSEN: As you know, your Honor, our case is based simply on these two documents, Exhibit D, The Pilot, and Exhibit E, the list of radio signals, neither of which the vessel had on board, and that the vessel was unseaworthy in not having these on board. That both of them contributed to the loss.

Exhibit D, the one with the caution about the current, if the captain had that on board, he would have allowed leeway or he would have stayed further off Quita Sueno Bank or he would have been otherwise warned so as to avoid the stranding.

If the list of radio signals had been on board, the watch officers would have taken bearings on Isla San Andres as an aid to navigation to determine the position of the vessel which would have avoided the loss.

Now, even if there was error in navigation, which we deny, if either one of these features of unseaworthiness contributed to the loss, that is sufficien

to establish the liability of the carrier for the loss of the cargo.

One note about delegation. The carrier can delegate the work of exercising due diligence to make the ship seaworthy but it cannot delegate the responsibility.

Thank you.

THE COURT: Mr. Jacobsen, I have two questions for you based on that statement. I appreciate that there is some doubt as to whether LORAN in that area would have been a helpful aid since it was a fringe area for LORAN reception. I take it based on your argument you are not contending that the absence of LORAN from the vessel's equipment complement constituted an unseaworthy condition?

MR. JACOBSEN: Well, your Honor, I am not excluding it but I'm not focusing on it. I have in mind this, that so far as I know, there is not yet a case that requires radar on board a ship, although it probably is long overdue.

THE MAGISTRATE: I had heard there with cases holding that the absence of radar constituted an unseaworthy condition. However, I have never heard about a case of LORAN one way or another, but you are much

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expert in this field than I.

MR. JACOBSEN: If you have a radar and it is not seaworthy, then that is unseaworthiness but as far as I know, there is a case out in Portland and there was another one in the Second Circuit that suggested that the time was imminent that such a holding would be made, but I am not aware of it.

THE MAGISTRATE: Obviously there are differences between the uses of radar and LORAN and the most obvious one being that the radar is valuable almost exclusively, at least for navigation as opposed to avoidance purposes, within a relatively close proximity to land or other existing structures, whereas LORAN, conversely, is useful only in open sea navigation, it not being that accurate for coastwise. However, if a vessel which -- if a vessel is operating and intends to operate coastwise and does not have radar and is, therefore, unseaworthy, it would seem just taking legal reasoning as opposed to mariner's thinking that the vessel intends to and in fact does operate on the high seas in areas where there is LORAN coverage and does not have LORAN coverage, that by the same reasoning, that would be unseaworthy.

MR. JACOBSEN: No, your Honor.

MR. BAILLIE: I think by their testimony they are discarding the LORAN.

THE MAGISTRATE: The testimony was in a short period of time there will be a superior worldwide system, namely Omega. However, the testimony also was that even as of now, which is over two years after the stranding, Omega is not fully operational worldwide, so I think we can assume it wasn't fully operational worldwide in January, 1972. In any event, the vessel didn't have Omega either. I am not urging a point upon you. And I am not saying that I believe that if there had been LORAN on the vessel, it would necessarily have changed the result. I am just asking if that is what you are arguing.

MR. JACOBSEN: We are not excluding it, your Honor.

THE MAGISTRATE: Another point that has me a bit puzzled. You take the position that if there was an unseaworthy condition because of the failure to have the new edition of The Pilot aboard with the caution in it, or the new Radio Signal List from which the existence of Isla San Andres would be apparent to a navigator, either of these two conditions caused the stranding, then there is an unseaworthy condition

and liability and indeed, you go further than that and say the burden is on them, first, to indicate that the stranding was caused by an error in navigation -- you don't even have to prove it was caused by an unseaworthy condition unless they prove it was an error in navigation first. What troubles me is this. Courts like to assign neat little cubby holes as causes and events and results and my experience and perhaps yours and I have a suspicion that the experience of most career mariners are that unfortunate events are very often the product of a number of causes and not just an isolated cause or two.

If I were to find factually that the stranding was caused both by error in navigation and by the failure to have aboard certain navigational publications and that the failure to have these constituted an unseaworthy condition, where does that leave us from a liability standpoint?

MR. JACOBSEN: That's what I want to emphasiz your Honor. The cases I will try to brief indicate all we need to establish, if there is an error in navigation, which we deny, but if there is an error in navigation, or more than one, if these unseaworthy features contributed in any way to the stranding, that

establishes liability. We believe the authorities hold that clearly.

THE MAGISTRATE: You would argue, then, if the factual finding were ultimately determined to be that it was an error of navigation to have continued on on the morning of the stranding under the conditions then existing, but that this error might not have been made had these other publications been aboard, that that would be sufficient for a verdict in your favor?

MR. JACOBSEN: Definitely.

THE MAGISTRATE: Do you agree with that, Mr. Baillie?

MR. BAILLIE: No. One more step. We then prove due diligence.

MR. JACOBSEN: The due diligence is, I agree- I don't feel any concern about that.

THE MAGISTRATE: He says he agrees with you to that point. If you then find that the absence of the publications on board was not caused by their lack of due diligence but rather by an unavoidable time delay in the system they were using for ordering and receiving publications, then that excuses the un-seaworthiness.

MR. BAILLIE: That is true. Also, it is more

than might. It has to contribute. There has to be a finding of fact.

THE MAGISTRATE: That is really what I wanted to get to. You see, there is two possibilities, even starrting from the rather complex premise I have given you. One is that both the unseaworthy condition and the error in navigation standing alone, either of them would have caused this stranding. And the other possibility is that neither of them standing alone would have caused it but the combination of the two of them put together caused it.

Does that make a difference under the legal standards?

MR. BAILLIE: I am afraid it does, your Honor I suggest your Honor read the Second Circuit's opinion in the Maru, which is the leading case on the subject and it was followed by Judge Frankel in a case called the Nicholas S. Embiricos.

THE MAGISTRATE: I read his opinion there. He may have followed it but I don't think that his own case there had those elements present in it. The elements I am talking about.

MR. BAILLIE: They were sought to be established by our position in that case.

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THE MAGISTRATE: I don't think he factually found that. Consequently, he didn't have to deal with the point of law.

MR. BAILLIE: This is largely, I have to admit, a question of fact.

THE MAGISTRATE: I am still troubled, even if I thrash my way through rather difficult factual questions, I still may be in murky seas legally and prudent navigation requires that you find out where you are going before you plunge on.

MR. JACOBSEN: Your Honor, on that point Mr. Baillie raised, in the Union Carbide case, Southern District, in the Second Circuit the court said "If unseaworthiness resulting from the carrier's failure to exercise due diligence to make the vessel seaworthy concurs with negligent management of the vessel by the officers, the carrier is liable." I think that principle is clear.

MR. BAILLIE: This is a cargo damage case.

MR. JACOBSEN: This is a cargo loss case. A very serious cargo loss case. Two million dollars.

THE MAGISTRATE: Let's go off the record just a second.

(Discussion off the record.)

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THE MAGISTRATE: Let's try to settle on a time for submission of briefs. I assume you are goin to want to wait until you get transcript before you do it. That is always the case. As you know, our reporters are rather badly backed up and transcripts don't come falling out rapidly, particularly not in a case such as this where we had a lot of geographic names and a lot of technical words which were giving the reporter a good deal of difficulty. I am not speaking of today's reporter. I am speaking of the previous two days. Does anyone have any estimation as to when this will be?

MR. BAILLIE: I would suggest, your Honor, we agree to have the main briefs in, say, 30 days after we receive the transcript, whenever that may be, and reply briefs in, say, 15 days thereafter.

THE MAGISTRATE: How does that strike you, Mr. Jacobsen?

MR. JACOBSEN: That is agreeable with me.

THE MAGISTRATE: You know what troubles me about that. If we assume that the transcript won't be ready for a month, that takes us to the end of May. This would put the final submission of briefs some time in July when I intend to be on vacation.

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MR. BAILLIE: Maybe we should extend it a bit. I have a very busy May and June ahead of me.

THE MAGISTRATE: If we don't get them in by the middle of June or at least a week before the end of the June, there is not much purpose of getting them in until August.

MR. JACOBSEN: Except the reply briefs will follow.

THE MAGISTRATE: That is a good point. I really hate to let a case like this hang on so long after it's been tried. Of course, it is nice that we tried the case within two years after the stranding. That is faster than we used to do in this district. It still seems that justice ought to be able to operate a little more expeditiously. Why don't we leave it this way. This will be our tentative schedule. Let's adjust it after we receive -- when we have transcripts. And see where we stand then. If we get transcript in less than a month, I would like to advance this so we will get the final briefs in by the last week of June. Conversely, obviously, if the transcript is not in for a much longer period -- off the record.

(Discussion off the record.)

THE MAGISTRATE: We have agreed that when

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we have received the transcripts we will reconsider these times and either shorten or lengthen them accordingly. With respect to the exhibits, by now I gather we have seen that all those that are in evidence have the identification marks stricken off so I can tell that they are in evidence and as you know, there are over a hundred exhibits and some of them have over a hundred pages each. And I haven't looked at all of them. I know you need the exhibits in order to work on your briefs but I would like you to leave the exhibits which are in evidence here at least today.

MR. BAILLIE: Since we won't need them until we get the transcript, your Honor can have them as long as you want.

THE MAGISTRATE: I will put this afternoon in on them. I am assuming that in your post-trial briefs you will be pointing out areas of significance of the various exhibits, which will direct my attention to them. Probably with more and better results than I will have just perusing them myself this afternoon. I do want to read the ship's log. I think there has been an awful lot of testimony about it. Maybe there is something that's been overlooked and there are a few other exhibits I want to look at with somewhat more detail.

MR. BAILLIE: We will just leave them here and pick them up on Monday.

THE MAGISTRATE: I wouldn't want to keep them beyond Monday for this reason. There will be matters in here on Monday and there is always a chance of somebody walking off with them. Consequently, if you could pick up your exhibits Monday morning, it will be appreciated. We lock the doors over the weekend so I assume they are secure during that time. Will you stack the exhibits--

MR. KOSTER: They are in groups of ten, your Honor.

THE MAGISTRATE: Make sure you remove anything which is not admitted in evidence. I think almost all plaintiffs were but the defendants had a couple that either weren't offered or weren't accepted.

MR. JACOBSEN: We were going to -- as I understand it Bowditch and Dutton are marked for identification and available. That is the way we left it, as I understand it.

THE MAGISTRATE: That's right.

MR. O'REGAN: Your Honor, the log we spoke about earlier today which we introduced from McMahon's testimony, we will mark that McMahon Deposition Exhibit C, six pages.

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THE MAGISTRATE: Fine. You leave that with his deposition transcript.

MR. O'REGAN: Yes, sir.

THE MAGISTRATE: Thank you, gentlemen.

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WITNESS INDEX

Name	Direct	Cross	Redirect	Recross
Auston D. Cushman (Resumed)	400	199	213	
Richard O Patterson	232	264		
Irving Lawrence McNally	295	341	373	
Michael Gibson	380	390		
James F. Kelly (Resumed)	403	410		
Francis E. Healy (Resumed)	416			

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71,72	219	220
73		389
Cargo Claimants		
I, J, N, Q		251
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DEPOSITION OF JAMES SIDNEY KERR

Master of the "Irish Spruce" (Ex. 60)

Exh. 453a
60

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

- -x

AMERICAN SMELTING AND REFINING COMPANY,

Plaintiff,

-against-

72 Civ. 656

S.S. IRISH SPRUCE, her engines, tackle, etc.,

-and against-

IRISH SHIPPING LTD.,

Defendant.

(AND OTHER CASES)

- -x

DEPOSITION OF
CAPTAIN JAMES SIDNEY KERR
WEDNESDAY, APRIL 19,1972
DUBLIN, IRELAND.

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

- - - - - - - - - - - - - - - - - - - -x

AMERICAN SMELTING AND REFINING COMPANY,

Plaintiff,

-against-

S.S. IRISH SPRUCE, her engines, tackle, etc.,

-and against-

IRISH SHIPPING LTD.,

Defendant

(AND OTHER CASES)

Deposition of
Captain James Sidney Kerr
Wednesday, April 19,1972
Dublin, Ireland.

72 Civ. 656

- - - - - - - - - - - - - - - - - - - -x

APPEARANCES:

HEALY & BAILLIE
Attorneys for Irish Shipping Ltd.

By: ALLAN A. BAILLIE and JOHN C. KOSTER

BIGHAM, ENGLAR, JONES & HOUSTON
Attorneys for all Owners of cargo carried on the S.S. "IRISH SPRUCE" at the time of stranding January 27, 1972, except cargo carried under B/L No. 5 Ballao to New Orleans

By: DOUGLAS A. JACOBSEN and FRANCIS M. O'REGAN

MR. BAILLIE: Mr. Jacobsen, will you agree to the following stipulation:

It is hereby stipulated and agreed by and between the Attorneys for the vessel owners and the Attorneys representing all of the cargo on board the S.S."IRISH SPRUCE" when she grounded and stranded on 27th January 1972, except for cargo carried under Bill of Lading issued at Callao destined for New Orleans No. 5 that this testimony may be used in any action

subsequently commenced, either in the limitation proceeding or by independent action in which Counsel here present may be representing parties; it is further stipulated that the transcript of testimony here taken need not be signed, sealed or filed but will be forwarded to the Attorneys for the vessel owners and copies provided for other counsel; it is further stipulated that all objections to questions except as to the form thereof will be reserved for the trial.

MR. JACOBSEN: That is agreed.

JAMES SIDNEY KERR, being first duly sworn, testified as follows:

Q. Captain, have you given your name and address to the reporters?

A. James Sidney Kerr. I live at 49 Kill Abbey, Kill-O'the Grange, Blackrock County, Dublin.

Q. Were you the Master of the S.S. "IRISH SPRUCE" at the time she stranded in January, 1972?

A. I was.

Q. How long had you been Master of the "IRISH SPRUCE"?

A. Since 7th July, 1971.

Q. For how long have you held a Master's License?

A. Since 1945.

Q. What Government issued your License to you?

A. It was issued on behalf of the British Government, but here in Dublin, they did not issue licenses at that time. It is accepted by the Irish and British Governments.

Q. Is this License re-issued from time to time?

A. No.

Q. Are there any limitations upon your License?

A. No limitations. 456a

Q. Is it a fact that you have served as a Master since 1945?

A. Since 1945.

Q. How long have you served as a Master for Irish Shipping?

A. Approximately 15 years.

Q. Were you on the "IRISH SPRUCE" prior to July, 1971?

A. No, not on the "IRISH SPRUCE" prior to July, 1971.

Q. Prior to the stranding of the vessel had you been involved in any marine casualty?

A. Not any serious marine casualty. I did have a collision, I think around 1947.

Q. You did have a collision in January 1947?

A. Yes.

Q. You maintained a deck log book on the S.S. "IRISH SPRUCE"?

A. We did.

(Counsel shows book to the witness).

Q. This is an original of what you call a rough log?

A. It is not the rough book. It is the original. The rough log is the carbon copy.

Q. Is this the carbon copy you referred to?

A. Yes, that it is, the carbon copy.

Q. Then what we will find in the original should be what we find in the rough log?

A. It should be exactly the same as the original.

Q. Was it kept after the vessel stranded?

A. We did.

(The original of the Log was marked Irish Exhibit "A").

MR. BAILLIE: You have had the opportunity of examining these. Is there any need to have them shipped over to the United States or may we keep them here? Can we have copies made?

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MR. JACOBSEN: I would like to have copies made and sent to me at my expense.

MR. BAILLIE: Copies of the whole thing?

MR. JACOBSEN: Copies of the pages covering January 20th to January 30th.

MR. BAILLIE: Mr. McNulty (Irish Shipping Ltd. representative), may we have copies of the original for the period from January 1st on?

(Answer by Mr. McNulty - "Yes").

MR. BAILLIE: Please mark the rough log Irish Exhibit "B". I should not call it a rough log. I should call it the carbon copy. In view of the fact that we will have copies of the original, do we need to copy the carbon?

MR. JACOBSEN: No, just mark it and have it on call, the carbon copy.

Questioning of Captain Kerr resumed by Mr. Baillie:

Q. Did you make any entry in the log book concerning the actual stranding?

A. No, that appears to be the Second Officer's writing, on duty from midnight to 4 a.m.

Q. The stranding occurred about 3:30 A.M.?

A. Agreed, about 3.29 1/2 a.m. I was on the Bridge at that time.

Q. Did you project a course that you would follow after leaving Panama?

A. The Second Officer lays the course and I approve of it.

Q. Had you a Chart in use at the time? Is this the Chart?

A. Yes, that is the Chart.

Q. That is the Chart upon which the Second Officer projected the course?

A. He did, that is correct.

Q. And you approved of this course? Had you prior to this occasion traversed the same route from Panama to American ports?

A. I had.

Q. Have you some idea as to how many times?

A. Since I joined this vessel, we did it from Panama up and back down again and this time. Some years ago I did it on another vessel.

MR. BAILLIE: This Chart we refer to is British Admiralty Chart No. 762. Please mark that Irish Exhibit "C".

Q. In projecting this course what did you take into consideration with respect to any navigation difficulties you might be faced with on the route?

A. In view of the fact that all the navigational aids in this part of the world are very poor, we first tried to make Roncador light.

Q. Roncador is approximately how far away from Panama?

A. About 100 miles.

Q. When you mentioned poor navigation aids, what did you refer to?

A. There the lights are very weak. There is nothing there to give a good radar reflection, no direction findings, the water is very deep for echo sounding. It is not a very good part of the world for navigation.

Q. I note that your course, however, leads slightly north north-east. Explain what these lines mean.

A. When we set a course for Panama - you could see it better on the other chart. The idea was to go up here picking up that line indicated faintly by 357. That may have been on some previous voyage. I would not like to swear to that. As the weather eased off a bit, we came up here, latitude and longitude being by sunsight.

Q. The Captain just indicated that instead of heading generally north northwest, he headed somewhat northeast. Because of the weather?

A. Yes.

MR. BAILLIE: We have been referring to British Admiralty Chart #1300 and will now refer to British Admiralty Chart #396. We will mark Chart #1300 as Irish Exhibit "D".

Q. The projected course was marked on this chart (referring to Chart #396)?

A. Yes, we went on 357 until we reached that position (indicating) and then we altered our course. This was our dead reckoned position at 8 o'clock and this was our dead reckoned position at noon on the 26th.

Q. You made slight changes of course which would be reflected in the log?

A. Shortly after noon we changed course. That is when we made a couple of small alterations as the weather eased off.

(Chart #396 was marked Irish Exhibit "E").

Q. Did you use yet another chart as you were approaching Quita Sueno Bank?

A. This one we went onto after we got here, to Roncador. This is to a better scale.

(British Admiralty Chart #1218 was marked Irish Exhibit "F").

Q. On this chart, what pencilled lines were drawn by the Second Officer? Did you draw that dotted line?

A. I doubt that one and I also doubt this one going up here. I must have drawn that as he had not come on watch then. He came on watch at that position. This solid line going to here I did not draw. That is that one going this way. I drew this one because the original idea was to alter course here. If we should continue on the same course then, this dotted line would show where we should have been. We did not know if our position was correct there.

To give the benefit of the doubt - . I marked our position. This is to get the approach to the East.

Q. You do not recollect having drawn the solid line but you must have done this (indicating dashed line) because the original idea was to alter course here? If I understand you correctly, you drew a line leading from a circle on your chart to another circle containing a mark "x" to the southwest of Roncador near a sounding figure which has been corrected in ink - it looks to be 330.

A. That is true - corrected sounding. It could be somebody may have found that depth of water on some occasion.

Q. You also drew a solid line from there to another circle near the figures "828"?

A. Yes.

Q. You also said that the dotted line reaching therefrom in a north northwesterly direction was made by you. Is that right?

A. That is correct.

Q. You also drew a line that is drawn to the west of the dashed line?

A. This line it was either drawn by myself or the Second Mate.

Q. It was either you or the Second Mate who made this line from the circle containing the "x" to the other circle. Is that right?

A. That is right.

Q. Why did you continue beyond this point which would be in a direction to the east of the solid line?

A. The reason I continued on is that when we got to that position, we should have been the light. However,this being a very poor light, I was not sure where I was so I decided to run on for a while to get a few more miles to be on the safe side.

Q. You are now referring to Roncador light. What do you mean by being "on the safe side"?

A. To avoid any reefs.

Q. Did you continue on duty on the bridge after that?

A. I did.

Q. At what time was the course change made?

A. The course was changed at 2400 hours.

Q. Midnight. At the circle with the "x"?

A. That is correct.

Q. At about 2400 you made an alteration of course from what to what?

A. We altered from 330 to 323.

Q. Did you continue on the bridge until the vessel stranded?

A. I went down for a few minutes once or twice but I was there substantially all of the time.

Q. Had you been more or less on the bridge all the time?

A. No; most of the time. As the weather was very bad, I did not stay below very much. But before that point I left the bridge once or twice.

Q. Did you have any publications aboard the vessel to assist in the navigating of the vessel?

A. Yes we had sailing directions.

Q. You had sailing directions?

A. That is correct.

Q. Is this the book?

A. Yes that is it, 1956 edition.

Q. Was supplement #6 issued in 1968 in it?

A. It was.

(The sailing directions were marked Irish Exhibit "G"; the Supplement "G-1").

Q. Did you receive notices to mariners on board the vessel?

A. Yes.

Q. Are these the notices? (Showing witness a packet of unbound pamphlets).

A. They are the latest ones.

Q. That is an American notice?

A. That is an American one we had. We had that on as well as the notice dated 25th December, No. 51.

Q. How were these notices received by the ship?

A. They were usually sent from the office. The American ones are sometimes obtained from the Coast Guard by the agents. Our office has always kept up to date with British ones.

MR. BAILLIE: There are 8 British Admiralty notices and 9 American notices.

Q. It would appear that these American notices have just been taken at random. Can you give us any explanation for this?

A. Well I think it would be a good idea to ask the Second Mate. I think it is just the ones we had. Our office would send them out by mail. This would be delayed in Peru. The mail service there was very slow. The Second Officer looks after that.

Q. Was this book "Ocean Passages of the World" on board the ship?

A. "Ocean Passages of the World" was on board the ship.

Q. Were these route charts in it - ?

A. They were.

Q. With particular reference to No. 5305?

A. I could not remember it now unless I saw the chart. Yes that is one.

(The book was marked Irish Exhibit "I" and the Chart Irish Exhibit"I-1").

Q. I show you another book. What is that?

A. That is the Directory of Radio Beacons for direction finders.

Q. Did you have a direction finder aboard ship?

A. We had.

Q. You are familiar with this book, Volume 2, 1961?

A. I am familiar with them.

Q. I call your attention specifically to the map in the book entitled "Central American and West Indies Beacons" and refer you to a mark with "San Andre's S.P.P. 387" alongside. What does S.P.P. 387 mean?

A. S.P.P. I am not sure of. 387 is the wave length. S.P.P. is the call sign.

MR. BAILLIE: This Chart is #5494.

(The book was marked Irish Exhibit "J" and the Chart Irish Exhibit "J-1").

Q. Can you tell us whether or not the direction finder was in operating condition on the evenint of January 26th?

A. It was in operating condition, yes.

Q. Did you have occasion to use it?

A. We had occasion to use it. We did not use it.

Q. What about the radar?

A. The radar was operating all right.

Q. Did you maintain a record of the repairs to the radar?

A. We did. There is a quarterly report goes in. The last three are there, the forms I signed when I was aboard ship.

Q. Now, you have been referring to a mimeographed or printed form headed "Irish Shipping Ltd. Marconi. Arkas and Decca Quarterly Reports" and in particular you have been referring to sheets dated 30th September 1971, 15/12/71 and 1/31/72. Isn't that so?

A. That is correct.

(Sheets were marked Irish Exhibits "K-1", "K-2" and "K-3").

Q. Whose job was it on board ship to see that the radar and other equipment were in order?

A. The Radio Officer looks after the radar and the echo sounder. The Second Officer looks after the gyro compass.

Q. Why do you have one dated 30th September and then skip to December 15th?

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A. There are company regulations when they are to be filled in. It should have gone on the 30th. I slipped up a bit.

Q. What does O.K. mean?

A. It is in working order.

Q. Is that for an entire quarter?

A. If there is no remarks about it then it has been all right for the quarter.

Q. The only reference to a repair is that contained in the report dated 30th September 1971.

A. Yes, at New Orleans. We had a technician down in New Orleans on the 'ate of this. It was giving a bit of trouble.

Q. Did you get it in good condition?

A. Oh yes it worked perfectly thereafter.

Q. What other documents do you have that in any way relate to navigation in this area? I will show you this book and ask you what this book is?

A. That is a list of lights, light houses on the -- .

Q. Are there any supplements in it?

A. There, right in this fly leaf.

Q. Could you give us some idea where these supplements came from?

A. The supplements came from the publishers of the book, the Admiralty.

Q. This edition is cancelled.

A. Yes, we had a new one on order.

Q. Would that take care of the supplements in the back?

A. The new one would have all that included.

Q. How do y find out when a new one is to be issued?

A. There is a notice given about it.

(The light list was marked Irish Exhibit "L"; the batch of Supplements "L-1").

Q. Did you also maintain what is called an official log book on the ship?

A. Yes.

Q. I show you these two books entitled Official Log No. 3 and No. 4. Can you tell me what these are?

A. They are Official Log-books of the ship.

Q. Whose writing appears in these books?

A. My writing.

Q. In No. 4 some of the writing is by Mr. Healy and by Mr. Kelly?

A. Signatures only. All the writing is mine.

Q. Is this a copy and if so, of what?

A. This is required by law to be kept. You enter occurrences; anything special that happens. Entry about being boarded by the Colombian Navy; that is unusual. Entry about grounding; that is unusual too. About all the members of the crew, inspection of the food and water, and lifeboat drills and draft on leaving each place.

Q. No. 3 appears to cover from December 26 through to January 27 and No. 4 covers concluding entries for January 27th and then further entries cover a period to March 3rd. Is that correct?

A. That is correct. That is a continuation.

Q. No. 4 concludes the entry for January 27th?

A. That is correct.

MR. BAILLIE: The original Official Logs have to be filed with the Irish Government and therefore will not be available as originals to us. You can inspect the originals now and we can have copies made. When we receive the copies, they should be marked as the Irish Exhibits "M" and "N". Is that all right?

MR. JACOBSEN: I should like to have typed copies made of pages 18 to 20 in No. 3 and 8 to 14 in No. 4 to be available for cross-examination.

(The typed copy of entries, requested by Mr. Jacobsen, were marked Irish Exhibit "N-1").

Q. What is this book and who keeps it?

A. That is the Chronometer book.

(The Chronometer book was marked Irish Exhibit "O").

(At this point in the examination it was discovered that the tape-recorder used to assist the reporters was not properly recording and it was mutually agreed that the examination should be resumed the following day).

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Ex 60

DEPOSITIONS

in the matter of

s.s. "IRISH [illegible]" - Stranding on [illegible] Shoal Bank.

Thursday, 27th [illegible], 1972.

held at

the offices of IRISH SHIPPING LTD.,
19/21 Aston Quay, Dublin 2,
Ireland.

on

Thursday, 27th April, 1972.

MR BAILLIE: It is agreed, Mr Jacobsen, that we will try to reconstruct the early part of Captain Kerr's testimony by comparing what we have here, which I think we can do. So I will continue from here with what I think should be covered now.

You called my attention to the fact that the stipulation does not contain a reservation of objections to the questions, except as to form, and will we add that?

MR JACOBSEN: Agreed.

MR BAILLIE: What we have here does not contain a reference to exhibit H, these are the Notices to Mariners, and the Captain previously identified them as coming off his vessel. There are eight British Admiralty Notices and nine United States Notices.

MR JACOBSEN: I agree that they were marked yesterday.

MR BAILLIE: Also the exhibit C is not properly described and it is the dronometer rate journal. Exhibit L is not referred to in this transcript, such as it is, and that is the list of lights(?) together with supplements which have been stapled together and which are marked exhibit L1.

MR HOSTLER: There is also no mention of exhibit M and N which were two lines of the official log, and it was explained yesterday that these logs had been filed and remained with the Irish Government but, I believe, we agreed we would furnish you with photostatic copies. Also you have the transcription, a typed copy, covering the entries covering the grounding, which we made and handed to you this morning, and it is being done and will be handed to you later.

MR JACOBSEN: That will be N1, will it not?

MR BAILLIE: Yes.

MR HOSTLER: Actually, we will mark the typed copy of the entry N1 when it becomes available.

CAPTAIN [illegible], having been re-called, testified as follows:

DIRECT EXAMINATION BY
MR BAILLIE:

Q. Captain, we have several other documents we would like to have you identify in order to mark them. Can you identify this document? (The same was produced) A. This is the capacity plan for the vessel.

Q. May we have that marked I-ish Exhibit P? While that is being done, Captain, can you identify this document? (The same was produced)

A. That is the cargo plan for the cargo we were carrying at the time.

Q. At the time she stranded? A. That is right, Sir.

Q. That will be exhibit Q. We have had copies made of some of these pages or sheets of which there is only one copy available. Captain, what are those sheets? A. They are U.S. Customs forms, inward bound.

Q. Can you tell us by looking at the cargo plan whether it covers all of the cargo aboard the vessel on this voyage? A. Could I mark on here. Perhaps I could put little pencil marks on.

A. I think not, Captain? A. Well, there is 2,000 sacks of coffee.

MR JACOBSEN: Why do you not take a careful look at it to see that it looks all right, subject to careful checking -- A. Off-hand, I would say it is correct.

MR BAILLIE: Could we have those marked?

MR JACOBSEN: Are they complete.

MR KOSTER: So far as I know they cover all of the cargo aboard the ship at the time she stranded.

MR BAILLIE: Can we staple them together and marked them exhibit R?

MR KOSTER: Yes, except that for some of them we are going to have to substitute photostatic copies, because I should imagine they would want copies of everything here.

MR BAILLIE: Captain, I show you this paper and ask you to tell us what that is? (The same was produced) A. A United States crew list.

Q. That is a crew list of all the numbers on board your vessel at the time you stranded, is that it? A. Yes, except the two females who were on board; they do not appear there.

Q. But they are not members of the crew, are they? A. Well they signed the articles but the American parties will not have them on a crew

list, you know.

Q. It will be exhibit S, crew list? A. There should be one with a visa(?) on it somewhere.

Q. Captain, so far as you know all these bills of lading are of the cargo aboard the vessel at the time of stranding; there are twenty-two there? A. As far as I know, that is correct.

MR KOSTER: We will marked these as exhibit T.

MR BAILLIE: Mr Jacobsen wanted copies of this if he could and the U.S. Customs manifest. There are some copies of the manifest here, but not all of them. I believe you asked for the certificate of registry.. Is that necessary, Mr Jacobsen?

MR JACOBSEN: Yes, please.

MR BAILLIE: I have here the original certificate of registry but doubtless this will be needed by the Irish authorities.

MR JACOBSEN: It would be agreeable to us, subject to a Xerox copy.

MR BAILLIE: If there is such a machine here. Would you mind a copy by whatever means they can duplicate it?

MR JACOBSEN: No.

MR BAILLIE: Well, I will mark that copy exhibit U when it is available. Do you have a cargo ship safety construction certificate?

MR JACOBSEN: No.

MR BAILLIE: This is a certificate in compliance with the requirements of the U.S. Water for the Improvement Act, 1970. This is a safety equipment record of inspection. This is merely a certificated copy of the crew list.

MR JACOBSEN: May I ask if the females are listed on the crew list marked exhibit S?

MR KOSTER: No, that was for the U.S. authorities and they do not require that they be listed.

MR BAILLIE: Captain, who were the women? A. There was my wife and the Chief Engineer's wife, Mrs. Mooney. I think there were three when we left Peru. There was one left in Panama, Mrs Doll[illegible]er(sic.) There had been three ladies in Peru, you see.

MR KOSTER: Do you want this copy list which indicates them or shall we just read their names?

MR. JACOBSEN: Can you substitute a copy as an exhibit? Captain, Mrs. Bollyer is the wife of the Second Engineer? A. That is right, Sir, yes.

MR. BAILLIE: This is a cargo ship safety equipment certificate. Do you wish a copy of this or not?

MR JACOBSEN: Not necessarily.

MR. BAILLIE: Captain, this is a direction curve for what? A. It is for the radio direction finder.

Q. Would you call it a correction curve for it? A. I do not know what you wouldcall it.

Q. And what is the date of this? A. I do not know.

Q. The date here says 7th June, 1967. Could we have a copy of that made and we will mark it exhibit W.

Q. This must be for the chronometer; is this the one you got? A. No, this is from the barograph for the barometric pressure.

Q. What does that indicate, Captain; barometric pressure of what? A. It is like an ordinary barometer but this records it on paper instead of just on a dial. You have the barometric pressure against the time when the paper moves.

MR JACOBSEN: It may be a good idea to make a copy. It might have something to do with the weather at the time.

MR. BAILLIE: We will mark it exhibit X --- A. There are barometer markings in the book anyway.

MR KOSTER: Exhibit X is a diagramatic representation of the barometric pressure from Monday, 24th January, through Sunday, 30th January. A. That is right. I do not know; he seems to have used the back of it as well, you see. We were running out of paper for this machine.

Q. You were running out of what? A. They have been using the back of it as well, so you could add on to that the second one which isthe following week.

MR BAILLIE This is a certificate of finance responsibility ---

MR JACOBSEN: Not necessary. Are you coming to the Classification Society certificates? A. There is a load line certificate.

MR. BAILLIE: A load line certificate?

MR. JACOBSEN: Yes, please.

MR. KOSTER: We will mark a photostatic copy of this exhibit Y. Panama Canal tonnage certificate ---

MR. JACOBSEN: Not necessary

MR. KOSTER: De-ratting exemption certificate ---

MR. JACOBSEN: Not necessary.

MR. KOSTER: New-type certificate; new marks on the side of the vessel. I think we'd better have a photostatic copy of that which ought to be marked exhibit Z when it arrives. Receipt for harbour dues - you do not want that, do you?

MR. JACOBSEN: No.

MR. KOSTER: Customs clearances?

MR. JACOBSEN: No.

MR. KOSTER: Tonnage dispatch receipt?

MR. JACOBSEN: No.

MR. KOSTER: Safety radio certificate?

MR. JACOBSEN: Not necessary.

MR. KOSTER: Safety constructions certificate?

MR. JACOBSEN: Not necessary.

MR. KOSTER: Cargo safety equipment instructions?

MR. JACOBSEN: Not necessary.

MR. KOSTER: Cargo ship safety equipment certificate?

MR. JACOBSEN: Not necessary.

MR. KOSTER: Sea-waying inspection certificate, skip to radios; this thing, going seaway. I will make photostatic copies out of that. This is a copy of a radio officer's end of voyage reporting form. I guess we might as well have that marked?

MR. JACOBSEN: Yes.

MR. KOSTER: I think it is conceivable that they might want that here, but there must be an orginal somewhere. When the photostatic copy is available we will mark it AA. Here is a certified copy of the international load line certificates. We have already given you the originals of these copies. On the originals there are no pencilled notations --- A. These are not on the originals. Somebody has changed these things for their own convenience, you see.

MR BAILLIE: This is just additional information. We do not need a photostatic copy of the original; we will use the certified copy and it becomes exhibit Y. Captain, you do not know who made the pencil notations? A. It must have been somebody on the vessel before I joined; they were already there, you see.

MR KOSTER: This is the certificate of apparent clearance by the canal zone for this particular voyage. Do you want that?

MR JACOBSEN: No.

MR KOSTER: These, Captain, came off the ship, as I understand it; what are they? A. Those are deviation cards, you know, for when the compass is adjusted.

MR BAILLIE: And there are two of them; one for the standard and one for for the steering compass? A. That is correct.

Q. You will probably need these here too, so we better have photostatic copies of these and they will be marked BB and BB1. Now, Captain, what is that? A. This is the same type of thing but on a different occasion, you see.

Q. This is also a compass deviation card. Do we know what compass this is for? A. It should say on it - could I have a look at the other one a moment, please?

Q. Actually, I do not think it makes any difference. I do not think we will bother with those. These are the ones which have already been marked. A. This is for 1963. Down that side is for the standard compass and down this side is for the steering, and it is the same on the other one.

Q. All right, we will have photostatic copies of those, and they will be CC and CC1.

MR JACOBSEN: I would like to look at the Panama Canal tonnage certificate or whatever it was?

MR KOSTER: For the record, exhibits CC and CC1 are the compass deviation cards marked some day in February which has been obliterated, 1962, and 24th May, 1963. Did you get what you wanted?

MR JACOBSEN: I am looking at it, yes.

MR BAILLIE: Captain, what is this paper? (The same was produced)

A. This is for calibratin the radio direction finder. You take a bearing on some object whenever you can and check it up to see that the direction finder is still pretty good, you know.

Q. And this is done by the Third Officer? A. The Third Officer was the one that was takin the visual bearings, you know, while the radio man was checkin it with the direction finder.

Q. It is on a printed form entitled 'Verification of Calibration' and headed the Marconi International Marine Communications Company Limited.

Q. Captain, what is this document? (The same was produced)

A. This is the Engineer's abstract - the abstract from the Engineer's log, you know.

Q. Covering what period? A. Itcovers from 20th January, 1972, to the 27th January.

Q. We will substitute a photostatic copy of that, if we may, and mark it exhibit EE when itbecomes available. A. These things are for the cargo.

Q. Yes, I know, but we have covered it by the manifest, have not we? A. Should it not be with those others?

Q. Yes, but I think there are other copies of those available? A. Yes, but these are on a smaller sized sheet.

Q. Yes, but I do not think that this covers all of it, Captain. I think this is just the cargo put aboard the vessel at --- A. Maybe it should be put along.

Q. All this will be left here to be sorted out. There are three papers in this envelope. One is numbered 3347, another one 3357 and they appear to be certificates given by Kelvin and Boon Ltd.(?) and there is a somewhat longer paper entitled 'Certificate of Compass', which does not have a number on it. We will have photostatic copies of these made, marked exhibits FF, FF1 andFF2. Captain, what is this document? (The same was produced) It appears to be a photostatic copy of a page inserted here? A. The calibrating tables for the doubt-ballast tanks, you know.

MR JACOBSON: Not necessary.

MR BAILLIE: Captain, I show you this document and ask you to tell me what that is. (The same was produced) A. It is the radio log.

Q. Is it a radio log for the vessel covering a certain period? A. Yes, from the 17th December, 1971, to 28th January, 1972.

Q. We could have photostatic copies of the pages which cover the dates from the sailing of the vessel at Panama through the stranding and two days thereafter. A. The radio log from Panama to the 30th January.

Q. And when those photostatic copies are available we will mark them exhibit GG. Captain, there is one more chart from the vessel that could perhaps have been marked. Could you tell me whether this chart was aboard the vessel when the pencil line was drawn thereon? Is that the continuation of the projected course if she was not stranded? A. Yes, that is right. If we had not stranded that would have been the course.

Q. And that was the course which was projected prior to your leaving Panama? A. That is right.

Q. We will mark that exhibit HH, and the number is British Admiralty Chart 1204.

Q. Captain, would you expain to us what that is? (The same was produced) A. That is movement of the engine.

Q. It was the deck bell book or the engine bell book? A. It was the deck bell book; it was on the bridge, you see.

MR KOSTER: We will mark that Irish exhibit II. Would it be permissible to substitute a photostatic copy of such pages as are required - this is the bridge bell book - just the entries for the stranding?

MR JACOBSEN: We are not requesting any particular pages.

MR BAILLIE: We are going to have to do all this anyway. Captain, what is that. (The same was produced) A. This book is a record of the soundings, you know, which are kept in it. The Carpenter goes around sounding the bilges and tanks and what not.

Q. Does it include a record of the soundings several days before the stranding and several days thereafter? A. This would do. No, this one ceases on the 26th when the Carpenter left, you see. Thereafter the Chief Mate took the soundings himself and put them straight into the log book. They are usually transferred. The Carpenter brings these to

the data and to transcribe them into the log book, but when the seaman was taking them himself after this he put them straight into the log book.

Q. We will mark this exhibit JJ and we would like photostatic copies of pages from January 14th to 26th. Now this is the bridge order book. (The same was produced) I understand that you have looked at it with Mr Jacobsen and it does not contain any night orders for after the period 4th January, 1971? A. Yes.

MR JACOBSEN: It is not necessary to mark it now, is it?

MR BAILLIE: This, Captain, what is it? (The same was produced) A. That is the movement book from the engineers.

Q. The Engineer's bell book? A. Yes.

Q. This will be marked KK and we request that photostatic copies be made of the entries for 26th January and 27th, which will be two pages. This is a copy of the tide tables, high and low water position, 1972. (The same was produced) Was it aboard the vessel at the time? A. Yes.

Q. And the tide tables for the East coast of North and South America (The same was produced) Was that on board the vessel too? A. The Nautical Almanack.

Q. This would have something to do with the taking of sun sights and so on? A. It would have.

Q. Wellbetter mark it LL. Captain, what is this book? (The same was produced) A. This is the compass deviation book.

Q. It will be marked MM, compass deviation book. Who writes in this, Captain? A. Whichever officer takes the measurement, you see.

Q. Would you examine the entries for 26th January, 1972, and tell us who made those entries? A. That was the Third Officer, Mr O'Connor.

Q. What entry is that? time and date? A. It is the 26th at 15.00 hours.

Q. Is that G.M.T. or local? A. That would be G.M.T.

Q. What is the next one? A. The next one is at 23.15 on the 26th, and that was made by ....

Q. Is that an apprentice officer? A. I am trying to figure out who did it. Yes, that is the apprentice officer.

Q. And the next one? A. The next one is on the 27th at 13.10 and that is by the Chief Officer, Mr Kelly.

Q. Was that made after the stranding? A. Yes, that was after the stranding.

Q. When did you sail from the Canal Zone, Captain, do you remember? A. Around one o'clock in the morning of the 26th.

Q. In the morning of the 26th? A. Yes, it is after midnight. It was 01.26 when we left the berth.

Q. 01.26? A. Yes, we left the berth then, you see, and at 1.42 the Pilot disembarked and at 1.54 we passed through the breakwaters.

Q. Now in connection withthis compass deviation book there is an entry dated 26th January, 1972, at 12.32 hours, which precedes the words "Panama Canal to New Orleans". Can you explain that to me? It looks as though there was a mis-statement of the date; it was probably the 25th? A. It says here "Panama Canal to New Orleans" - it must be the 26th.

Q. The entry prior to those words? A. This one here.

Q. Yes, that one? A. I guess that should have been the 25th.

Q. Who made that entry? A. That is the cadet officer.

MR BAILLIE: Mr Jacobsen, if any point is goingto be made on this we'd better have the cadet officer testify about it.

MR JACOBSEN: Could have he done it in the Canal on the side? A. He could

MR BAILLIE: What was the time of it, Captain? 12.32.

MR KOSTER: It seems to be a simple error in putting down the 26th instead of the 25th.

MR JACOBSEN: Could it be that the words "Panama Canal to New Orleans" should have gone above that?

MR BAILLIE: You could figure that out from the position given.

MR JACOBSEN: May I ask a question?

MR BAILLIE: Of course.

MR JACOBSEN: Captain, I note looking at the entry that we are talking about he has the gyro errors 1½ high, is that? A. Yes, high.

Q. Is that East or West? A. It is reading too much, if you know what I mean. Supposing for instance we were steering 020, whereas with this

thing if you were steering 020 it would be reading 021, because it is 1 or 1½ high, you see.

Q. The true would be 1° more, is that right? A. The way we work this thing is that it reads 1°, but this is a mechanical error and it varies.

MR BAILLIE: Would you remind Mr Kelly when he comes back that we would like to have photostatic copies of the pages covering the entries from January 20th, 1972, through February 25th, 1972. That is just two pages.

MR JACOBSEN: Are you planning to call him. I do not think it is probable.

THE WITNESS: He is available in Dublin if you want him.

MR JACOBSEN: Captain, what watch did he stand, if he stood a watch? A. Not by himself he did not; he used to be on watch with the ChiefMate.

Q. What watch did the Chief Mate stand? A. 4 o'clock to 8 o'clock.

MR BAILLIE: The Chief Mate is going to testify. He can probably answer that.

MR JACOBSEN: This entry is formed during that period? A. That is right. The Chief Mate would be there anyway.

MR JACOBSEN: I am willing to stipulate that he testify what is contained in that entry.

MR BAILLIE: That is the point. I want it to be understood that the date should be January 25th, which is obvious I think, even if it comes out January 24th and before the other entries for January 25th.

MR JACOBSEN: This would appear to be out of sequence because the next entry is 2½ hours later.

MR BAILLIE: All right. Please get Mr Murphy here.

MR JACOBSEN: Is that right? A. No, Sir.

MR BAILLIE: Captain, do I understand it correct that your ship was a weather reporting ship? A. Yes.

Q. Is this the record kept of observations made of weather conditions and so on to whomsoever you reported it? A. Yes, these are the copies that stayed with the ship.

Q. Can we have this book marked? Is it the form that you sent in, Captain? A. Yes, you write the message on these forms, you see, and give

them to the radio officer who sends them out then.

Q. He sends it out by radio? A. Yes.

MR. HOLLAND: We will mark the copy of the form NN3, and you would like to have photostatic copies made of the entries of 1972, four pages on which writing occurs. Captain, let us go back to your plotting the course at Panama, because it may not be very clear from the transcript that we have. I think you said that you and the second officer together projected what course you would follow to cover the distance between Panama and your destination, which I believe was New Orleans. Is that correct?

A. That is correct.

Q. We have previously marked the charts. One, exhibit B, the chart number 396 covered the initial stages of that voyage? Is that correct?

A. That is correct.

Q. And the one that covers the voyage all the way up to 5° 21' is marked on exhibit C. Is that correct? A. Yes.

Q. And that is the one on which you show the erased lines, which is the original course of plot. Is that right? A. You mean the original'

Q. Yes. A. We decided we could not go on it.

Q. That is what I wanted to do, to explain it for the record. What did you do? A. You see that position there?

Q. You are pointing to the position marked 12.00 hours? A. That is it, transferred from here to there. Instead of going that way, the weather was bad and the ship was rolling violently, so in order to ease it we eased the engines down and steered up that way.

Q. That is bearing somewhat North-east? A. That is right, yes.

Q. Whereas, your originally planned course was somewhat North-north-west, nearly North - 357°? A. Nearly North, 3° out.

Q. It was 357°, Captain, right? A. That is right, yes.

Q. Now your aim as I understood you to testify yesterday was to pass somewhat near Roncador light, is that right? A. That is correct.

Q. How far off Roncador light did you plan to pass? A. About 10 miles.

Q. About 10 miles, so that you made several alterations of course in order to get there rather than proceeding on the course of 357°, is that correct?

A. That is correct. We could not proceed on the course 357°.

Q. I won't say that you could not proceed, but I am just asking you, you made several changes of course? A. That is correct.

Q. At what time do you think you must have been somehow driven off or not able to follow your projected course? A. I think it happened somewhere between Lara and here.

Q. Now you are pointing to the various courses you projected or dead reckoned as having been covered from 12.00 on the 26th through to a point on the line indicated by an arrow somewhere in the vicinity of Roncador light? A. Yes, that is correct.

Q. I believe your testimony was - and it may show up in the transcript or it may not - that you did not pick up Roncador light? A. No, we did not pick it up.

Q. All right; what did you do when you did not pick it up? A. We continued on that course further on.

Q. You continued on that course, and that course is indicated by the line drawn from 20.00, is that right? A. Yes.

Q. Up to a point which is a little circle with a printed figure 151, is that right? A. No, because there is an alteration of course here from 330° to 323°.

Q. Captain, my question was this. What did you do after you found that you had not picked up Roncador light when you said you did, and you then said you continued on that course, and all my question was addressed to was whether or not you meant this line. Do you understand? A. I do; I understand. We continued on the course of 330° for a further hour, after which we altered to 323°.

Q. I see. Does this line indicate an alteration from 330° to 323°, and if so where is it? A. The bigger scale chart is better there.

Q. I realise it is better. Yes, you are quite right; there is an indication of a course change at the point of the arrow. When was this line changed and who changed it? Is that a matter for the Second Mate to talk about? A. No, I can explain that. It is very difficult to explain it on this small scale.

Q. I understand that, Captain. A. But we ran on here for a further hour, then we steered that course which would be parallel to this line.

Q. I see. Is that the one you indicated on the chart which is exhibit I, chart numbered 1210? A. Yes.

Q. Now, Captain, that is the only change in course you made then prior to the stranding. Is that correct? A. That is correct.

Q. That is the change from 330° to 323° at what time? A. 24.00

Q. So that change of course would put you closer to Quita Sueno Bank, is that right? A. Well, it ——

Q. Just answer the question. Would it put you closer to Quita Sueno Bank? A./ Than if we had continued on that course?

Q. Than if you had continued on that course? A. It would.

Q. Did you do anything else at all, take any other action with the vessel when you could not pick up Roncador light? Did you do anything else? A. No.

Q. You did nothing else? A. No.

Q. Tell us what happened when you finally realised you had run aground? What caused you to think you were aground and what did you do next? A. Do I understand you correctly, Sir. What caused me to ——

Q. What happened after you changed course? A. Well, we continued in the usual manner, like, with the radar running and the echo sounding machine running, you see.

Q. Yes. A. Now, we got a reflection in the radar which subsequently proved to be that wreck.

Q. What did you think it was at the time, Captain? A. I thought at first it was a heavy rain shower, you know; there were a lot of them around, and then I thought it could be a fishing boat. It did not enter into my head that it was that wreck away over there.

Q. You had the fathometer going and you had the radar going? A. That is right.

Q. And they were both operating well? A. Of course, there was no sounding at all on the fathometer because it has a maximum range of 600 fathoms and you can see all the depths here.

Q. Do you have a tracing from the fathometer, Captain? A. Yes, I have.

Q. Could you produce it please? A. Yes, I could.

Q. Captain, you have produced the record from the fathometer, have you, for a certain period? A. Yes, I have.

Q. What is this? A. That is the sounding, prior to grounding, you see.

Q. That is prior to grounding? A. A matter of a few seconds.

Q. A matter of a few seconds only? A. You see, there should be little liner coing across but they have faded off - about 80 seconds.

Q. The matter at the end of the right-hand side of this piece of paper indicates echoes received for about 80 seconds prior to the stranding, is that correct? A. That is correct.

Q. Let us have that marked as an exhibit. So I understand from what you say about the fading of lines that this is likely to fade from view entirely? A. I do not say it would fade from view entirely. It definitely does not stay as pronounced as it is when it is new,you know.

Q. This will be exhibit CC. Would you tell me what it means, Captain, as I am not too familiar with this type of thing? A. You see, the full range here is 150 ft.

Q. The range from top to bottom is 150 ft.? A. That is correct. Then is 10 ft. to each of those lines that way, you see.

Q. The parallel lines are 10 ft. apart, is that the idea? A. That is correct, yes.

Q. What do these markings mean? A. Here is where the first sounding came in.

Q. The first sounding is at the extreme left of the indication? A. Yes. Now, it is shoal here and suddenly shoots back again.

Q. So when you reach the peak it is indicative of some shoaling? A. That is shoaling.

Q. And it comes down almost to 5 ft., is that the idea? A. That is right, yes.

Q. And then it shoots back up again and then goes to zero? A. That is to zero, and that is where she hit.

Q. So from the fathometer readings the bottom did not shoal until about 80 seconds prior to the actual stranding? A. Yes.

Q. It may be better to photostat it now before it fades completely, just the right-hand side.

Q. Ordinarily would those parallel lines extend through the indications on the paper of the soundings? A. I do not understand.

Q. You see the parallel lines on the left part of the sheet that you have, as you look at it, do not extend through the indications of sounding. Those parallel lines, like this, give an indication where no parallel lines should. I was wonder why those parallel lines go through. Do you know? A. No, sometimes if the sounding is very faint you can still see the lines going through.

Q. I am not talking about the up and down indications of depth; I am talking about what is on the paper prior to the thing being put in the recorder? A. They are not on the paper; they are put in while the thing is running.

Q. You still do not understand what I mean. You see on that piece of paper distinct parallel lines indicating 10 ft. Until you get to the area on that paper where you begin to get markings of that sort, those lines do not extent through those indications and I wondered why. I would have thought that the indications which you get back from the fathometer of shallowness and so on would be on something. May be there is an explanation. I do not know. Captain, I do not think thatthe questions and answers with respect to the direction finder were properly transcribed; the questions I asked you yesterday. You were not using the direction finder, as I recall it, during the transit from the vicinity of Roncador light to the point of stranding? A. No, we were not using it.

Q. Why is that? A. There was nothing to use it on.

MR.BAILLIE: There was nothing to use it on. You pointed out the other day ----

MR.MOORE: Objection. You pointed it out.

MR.BAILLIE: I pointed it out. Well, Captain, did youknow at the time whether or not there was a sending station, of whatever capacity it may have been, on San Andreas at that time? A. I knew it was there, but this is an areo beacon. First, at the distance it was at it would be no use to us and, secondly, there was nothing to cross it with.

A. Secondly, there was nothing to cross it with. Q. That means there was only one possible bearing to take if you had been able to receive it? A. It would have been useless in my estimation.

Q. Captain, did you have a copy of the charter party aboard the ship?

A. I had one, yes.

Q. Is that a copy? (The photo was produced) A. Yes.

Q. Can we have that marked? Captain, I know you did not take these pictures but I wish you would look at them and tell us whether or not they indicate correctly what you could see from the vessel as she lay on her strand? (The photos were produced) Actually, they were taken by my associate when he was aboard. A. Yes.

MR JACOBSEN: Do you know the name of that wreck, Captain? A. I do not know. I know it was an American ship and further up again there is a Japanese.

Q. Did you see the Japanese one? A. I saw it when we were going away in the tug boat.

MR BAILLIE: This, Captain, I take it is the salvage boat? A. That is the tug, you see, and this is the process of getting a coaster alongside her to lighten the ship. They float him down on his tow line and bring him around this way, you see.

Q. These photographs we will make exhibits QQ, QQ1 and QQ2, and I ask you, Captain, do they indicate the breakers on the reef near your ship as ship lay in the strand? A. Yes, they are very good pictures of it.

Q. Captain, in photograph, exhibit QQ, Mr Jacobsen has been referring to what appears to be a vessel on the horizon and towards the right of the picture; is that the wreck we were talking about? A. That is it, yes.

Q. Was the radar in operating condition after you went on the strand? A. It was still operating but on account of the way the ship was bumping we switched it off.

Q. Did you get any echoes on that ship after you went on the strand? A. Yes.

Q. You filed a protest, did you not, with the Columbian Government? I understand you can speak Spanish very well, Captain? A. A little - I can manage anyhow.

Q. This copy which you have handed me is in Spanish. For our Mr Jacobsen's convenience - perhaps he wants to use it in cross-examination - could you translate it for us? A. It is headed "Protest" and then it says: "S.S. IRISH SPRUCE, longitude 14.15°N, latitude 81.10° W, Quita Sueno, Saturday, 4th March, 1972". As for the rest of it, there is not much translation about that.

• "Could you go ahead and translate the whole thing? A. "Mr. Captain's report, San Andres Island, Republic of Columbia," and then you say "presente". I do not know what the hell that means, but you must say it to those people anyway. "I, Captain and the officers of the above-named ship of the Irish flag actually appeared here before you with the necessary respect here to manifest the following" - this is as close a translation as I can get to it.

•. It is very good. A. "The following is the truth, the whole truth and nothing but the truth. The ship ran aground on the 27th January at 5.30 hours. We were on a course from ..... to New Orleans. The wind was East-north-east 4, the sea was agitated and the weather was cloudy with good visibility. The engine functioned very well, also the radar, echo sounder, gyro compass, automatic helm, etc. In my opinion the cause of the grounding was due to a current to the West, strong and abnormal." This bit <u>here</u> I do not know how to translate. I know you put it there but — I think it means, "On account of the foregoing" or something like that. "In use of the facilities that the law concedes me, I come to protest against this happening which is not the responsibility of the ship, of my command, its officers, nor its crew. God guard you. Mr Captain's report," and it is signed by myself and the chief officer.

Q. Could we have a photstat made of that? Captain, have you any criticism of the ship's navigating equipment as it was prior to the stranding? A. No, I have no criticism.

Q. First of all, I have a few questions. Having looked at the compass deviation book and checked the position as stated here it now becomes apparent the day was correct and the only thing was that Panama to New Orleans should have preceded that entry. I am referring to the entries on exhibit TT. I would also like to have marked the log entries for 29th and 30th August, and these were the days on which the vessel last traversed the distance between the Panama Canal and the Quita Sueno Bank, and the entry for the 2nd October, 1971. This is the day on which the vessel passed from Quita Sueno bank on route for the Panama Canal from Galveston. These pages will be marked, for 29th August and 30th August, SS and SSA and for the 2nd October TT. You were aboard, Captain, were you, when the

vessel make those voyages? A. I was.

Q. Did you have occasion to observe the ocean currents in the vicinity of the bank at that time? A. We did not experience any adverse currents or anything abnormal at all.

Q. There had been other occasions when you had made the transit from the Panama Canal to the Gulf ports, were there? A. Yes, there were.

Q. On other ships? A. On other ships.

Q. And did you have occasion on those voyages to observe the currents? A. For a mile or two miles but never anything like this.

Q. Never anything like this. Is this a copy of a report you made to the Company, Irish Shipping Limited? (The same was produced) A. Yes.

Q. Do you have a signed copy of that? A. There is one in the office some place, and I have one here.

Q. May I see this copy please? A. This one is only written.

Q. Is it hand written? A. Yes, I have not got a typewritten one

Q. Well, let me see the hand written one, please? And this is supposed to be a correct typewritten copy of this? A. Yes. That is a carbon copy but the original is here in the office.

Q. Let us mark the original and have a photostatic copy of it. A. Can I keep the original of this one? It is for the Irish Government, you see.

Q. Let us mark the typewritten copy as the next lettered exhibit, UU1, I suppose, since you are not going to mark the original handwritten copy. Captain, I think you also told me that you were questioned by some official of the Columbian Government? A. That is correct.

Q. And subsequently you were handed a transcript of the questioning and your answers? A. That is correct.

Q. May we see a copy of that please? We will have this marked as exhibit VV, and have it photostated. Perhaps for the purposes of your cross-examination you had better take a couple and have them translated if you will? A. That will be a little difficult because the person typing it obviously lacked some education, but I think I can managed.

Q. All right, fine. Can you go ahead Captain? A. The heading is "Declaration of the Captain, James Sidney Kerr." The day is the 3rd March, 1972. This is a bit mis-spelt here, but it seems, more or less, according

To the functionary - I suppose, we would call it - of the Captain, James Sidney Kerr, identified with the passport No. P 35066, with the object to render a declaration of the grounding of the M.S., I think it is, of nationality Irish, whose owners are Irish Shipping Ltd., Dublin. In position latitude 14° 14', longitude 81°.10' - it does not say North, South or anything - reef of Quita Sueno, which belongs to the Republic of Columbia. The functionary of instructions - this is all spelt very badly - by the subscribed secretary - and they have run all that into one word - I took the strict swearing - that is a kind of oath, I suppose, - and he promised to tell the truth, the whole truth and nothing but the truth in his exposition. Questioned about annotations, he answered, "I call myself, James Sidney Kerr of 53 years of age. Civil state, married. Natural of Ireland." Questioned: "At what time of day did you run aground?" Answered: "At 3.30 hours." Questioned: "Have you had the opportunity to navigate in these latitudes?" Answered: "Yes." Questioned: "For how long have you been a Captain?" Answered: "More or less, twenty years." Questioned: "Who is the real owner of this ship?" Answered: "Irish Shipping Limited, with social domicile in Dublin." Questioned: "What was the route that you were on?" Answered: "Callao, Peru, to New Orleans." Questioned: "What class of cargo did the ship carry?" Answered: "Minerals: copper, zinc, lead and coffee(?) in bags." Questioned: "Have you presented the protest of grounding to the Captain of the Port?" Answered: "No." Questioned: "How many crew members navigated in the ship?" Answered: "Forty." Questioned: "Who is the representative of the company in Columbia?" Answered: "The boat was charted to ....Peruano de Vapores(?), whose representative in Cartahena(?) is Roldan." Questioned: "What class of weather was predominant in the area on the 27th January?" Answered: "The wind was East-north-east 4, agitated sea, the weather was cloudy." Questioned: "State the conditions of functioning in the department of machinery?" Contested: "Good." Questioned: "In your professional opinion what was the motive for the IRISH SPRING under your command to arrive at the actual position of grounding?" Answered: "An abnormal current." Questioned: "How did you find the electronic equipment?" Answered: "Working well." Questioned: "What manoeuvre was effected to get the ship off?" Answered: "In the moment of grounding the engine

[illegible] run full speed astern, and I have two men with [illegible] sufficient law without a result." [illegible] asked: "Have you anything to say, amend or alter in the present investigation?" [illegible] answered: "In my opinion you should have better aids to navigation." "The functionary of instruction, having nothing further to amend, alter or anything like that except an [illegible] declaration and add statements and those who intervene (etc.)" That is [illegible] I can do with it.

MR DAILEY: There is just one more thing. I want to explain on the record that the exhibits 4A, 4B and 4A2 are photographs taken by Mr Roster when he was aboard the ship approximately a month after the stranding and the pictures do not indicate the heading of the ship at the time of the stranding.

MR JACOBSEN: For the record, would it be about the 27th that you were aboard.

MR ROSTER: I was aboard the 29th.

CROSS-EXAMINATION BY
MR JACOBSEN:

Q. Captain, referring to your protest, which is exhibit RR, which is made in Spanish, it is dated March 4th. Is that the day you talked to the Spanish with respect to the questions and answers to which you have just testified and translated, and which is marked VV? A. I do not understand the question.

Q. I take it that exhibit RR was made on March 4th? A. This is the day it was made on.

Q. Then going to exhibit VV, which is the questions and answers which you have just translated, when did that interrogation take place? A. Is there no date on it? Anyway, there is a date in the log book when this fellow boarded.

Q. Were they aboard then from March 3rd to March 4th? Were they aboard March 3rd, is that correct? A. I think it was but it can be verified.

Q. Was exhibit RR prepared on board the IRISH SPRUCE? A. I composed it and the second officer typed it.

Q. And both yourself and the Chief officer signed it, is that correct? A. Yes.

Q. Referring to exhibit B and in particular the noon position for

[illegible] which you testified to on direct examination, who actually computed that position? A. The observation?

Q. The observation? A. The second officer and the third officer.

Q. Do you know what observation they used - the sun line? A. Yes, they took the longitude first and then the latitude afterwards.

Q. And did you have confidence in that position? A. Yes, I had.

Q. I believe you testified that you had a Decca navigator on board? A. We had.

Q. Did it operate? A. Not in this position; it cannot operate there.

Q. In other words, in other words in the Carribean you do not have sufficient stations? A. No.

Q. Did you not have a Lorani(?) with you? A. No.

Q. Have you had a Lorani(?) could you have used it in the Carribean? A. If we had had a Lorani(?), but I am not conversant with it being an American instrument, but I believe it can be used round there.

Q. What trades has the IRISH CROWN been involved in since you have been on board? A. From Peru - we left Liverpool and went straight to Peru, after that we went to Mexico, then back to Peru, then to the Pacific U.S. coast, then back to Peru and then back the last time when we were on our way to New Orleans.

Q. Have you sailed on other Irish Shipping ships? A. Yes.

Q. How long have you been with the Company? A. Well, on this occasion, somewhat over fifteen years.

Q. Have you sailed as Master on the other ships? A. Yes.

Q. Have you sailed in any capacities other than Master on the other Irish Shipping ships? A. On many of them.

Q. As chief officer? A. As chief officer for a few month , then I was Master of various ships.

Q. What trades were those ships on, that you sailed on other than the IRISH CROWN? A. I was on a ship that was trading across from here to the Manchester Canal, that was coastal; and then I was on the North Atlantic quite often; and then we sailed down the St. Lawrence River; a few times up the Persian Gulf; various occasions in Japan, India, South Africa and before I was with another ship on this run as well.

Q. Was the other run that you made in this area on Irish Shipping ships? A. Yes.

Q. Was Irish Shipping continually to through this area on its trade routes? A. When I was on it before we were also chartered to the Peruvians.

Q. Are there other Irish Shipping ships on this run at the present time? A. I do not know if there are any at the moment which are regularly on that run, but of course naturally sometimes you get one running through there.

Q. It is not unusual to be going through there on an Irish Shipping ship? A. No, it would not say it was altogether unusual. I would not say, on the other hand, it was a regular thing. All our ships are at some time chartered to one person or another and sometimes they have occasion to go through there.

Q. How many deck officers did you have on the IRISH SPRUCE? A. Three.

Q. That would be the Master yourself, chief officer, second officer and third officer? A. Yes.

Q. Are all those officers licensed? A. Everyone of them.

Q. You have testified about your licence; did the others have an Irish licence? A. Yes, they have licences which were issued here in Ireland.

Q. And did you have a deck cadet? A. Two deck cadets.

Q. Do you have a radar observer's certificate? A. I have one; it is at home somewhere.

Q. Where did you obtain that certificate? A. In South Shields, Tyneside.

Q. In England? A. Yes, and then I have been on a radar course since in Liverpool. That was only a few years ago.

Q. With regard to your other officers, do you know whether or not they have a radar observer's certificate? A. They are youngish fellows, you see, and as far as I know this is incorporated into the licences which are issued now.

Q. What arrangements did any of you have for plotting on the IRISH SPRUCE? A. You have this perspex thing over the screen, you know, and you can mark it with one of these pencils.

Q. Grease pencils? A. Yes, a kind of yellow thing, and you mark it on this and it gets reflected then on to the screen.

Q. The black plastic surface on top of the scope? A. That is right,

and you put your hand in through the side of the radar viewing thing, and you put a little bit over the object. As the object moves along you put another dot, and you mark the times for these things, you see.

Q. Did you have any other plotting facilities other than this plotting head which is on top of the scope? A. You have this, whatever you call it, thing like that and then there is a circle thing that you can swivel round and it is all marked in degrees. I prefer the other one myself; it is simpler.

Q. Are you referring to the manoeuvring board paper - the other thing you were referring to? A. It is not paper; it has got this circle thing and you can swivel it round. It has lines on it and all that.

Q. Where was it kept? A. In the chart room.

Q. Is it a table or does it just sit on top of the table? A. You can put it anywhere. You can put it here, there or hold it up, like that.

Q. With respect to your night order book, Captain, I notice that the last entry was January, 1971, but you came on board some time after that? A. I came on board in July, 1971.

Q. So I take it that you have not used the night order book? A. I do not use it; if I have any orders I write them on the top of the log page. If I intend to be around myself, then all right; but if I intend to go to bed and there is anything at the time I want to be called I write it on the top of the log page.

Q. Could that be on the original? A. It would be on the original and on the carbon copy.

Q. Do you have any standing orders on the INISH SPRUCE? A. The standing order I told to all officers verbally/wherever they were was in case of fog or bad visibility to call me immediately and not to hesitate to reduce speed. "Do not wait until I get up there. Do it immediately I am called."

Q. Were those verbal orders? A. Yes.

Q. Do you have any written standing orders? A. There is always there and being drawn to the officers' attention the Company's instructions, that all precautions must be taken in the event of bad weather.

Q. Do you have a copy of the Company's instructions available? A. I have not got them.

Q. Was there a copy on board the INISH SPRUCE? A. There was one exhibited in the chart room.

. That was received from the company. I think I would like to see a copy of that. A. There have been two or three instructions on that score, you know. The circular things are the instructions.

. And that is sent by the company at headquarters. Do you have a port captain or marine superintendent at Irish Shipping? A. Yes.

. Would this come from his office or from h[illegible]? A. They would come from the operations manager. They originally come from him, but they go through the operations manager.

. [illegible] have on the IRISH SPRUCE any file of letter instructions that were periodically from the company? A. We did.

. Did you take those from the IRISH SPRUCE when you left? A. I think not. I think they were left - as a matter of fact, I think they were destroyed.

. Would there be a copy of those at head quarters? A. Possibly.

MR JACOBSON: I would like to see those.

MR BAILLIE: What is it you want to see?

MR JACOBSON: The Captain referred to a file of letter instructions that were sent out to the IRISH SPRUCE.

. Captain, I find several positions indicated as the strand position, I believe. To the best of your knowledge what is the best position you have on the strandin_? A.14° something - sometimes it was 14.7, sometimes 14.8 - you know, we took various observations of the sun after stranding they were never exactly the same, and 61° 10' W.

. And 14° what? A. Let us say 14°.5 as an average.

. How many degrees would that be? A. 14° 14.5'.

. Do you still have a better position than 14° 12½' which I believe appears in one of the logs? A. It could appear because we were taking observations on various days after but I think it wouldbe about right.

. With respect to the Notices to Mariners, what was the practice of Irish Shipping; who sent them to you? A. The operations department would send them to us.

. Are they located here in Dublin? A. Yes.

. In this building? A. In this building.

Q. What was the practice on the [illegible] as to what was done with them when they arrived there? Was anybody assigned responsibility?

A. The second officer took them and went through them and corrected charts accordingly.

Q. What were the instructions in respect of this; did you get any specific instructions? A. There were no specific instructions to give. This is the usual practice in the company, that when the Master puts these things he acknowledges them, calls the second officer, hands them to him and the second officer as his opportunity arises puts all the corrections on the charts.

Q. Does he correct anything other than the charts? A. He corrects the lights and the sailing directions, any corrections like that that come up.

Q. And what is the practice once those commands have been entered by the second officer and he has completed his duties in this respect? A. He puts the notices on the file and they are kept for a number of years back, you know.

Q. Is there any regular practice as to how long you keep them?

A. I do not think there is anything regular, but you keep them for three or four years.

Q. When you say you acknowledge receipt of them, what means do you use to do that? A. When the company sends a circular to the Master with the various publications and instructions in it, then you tick all the things off and you tear the bottom off and it has a number of the circular on it and then you acknowleige receipt.

Q. Who was the Captain on the IRISH SPRUCE before you in July 1971? A. Captain M..... (inaudible)

Q. Referring to the compasses and the gyro compass in particular, what had been the condition and operating status of the gyro in the month prior to the stranding; had it been operating properly? A. Yes, it had been operating.

Q. What error had been obtained? I know we have the compass error book here, but was there any particular pattern? A. Maybe, sometimes it might be one degree low on on passage or on another passage one degree high, something like that.

Q. When was the last that the gyro was checked before? A. Whatever, is in the book there; you see, that attends to all the compasses.

Q. I show you exhibit 11. (The same was produced) This is the compass error book and was the last entry January, 27th; that was after the stranding I take it? A. The gyro does not appear here because it was then switched off.

Q. But the one prior to the stranding would be that one here, which would be 23.15 on January 22nd? A. That is correct.

Q. The gyro error at that time was one degree low? A. Yes.

Q. That would be one degree East, would not it? A. One degree low - it is really one too little. That is the way we work on the gyro.

Q. If you were steering 322° at the time of the stranding, you shoid be making 323° true, is that correct? A. Thatis right.

Q. That is whatyou mean b the one degree low, which I think would be one degree to the East? A. Yes, I suppose so. We always use the East and West on the magnetic.

Q. Was that an azimuth or altitude - can you tell from the book? A. It is an altitude.

Q. Who set the altitude? A. It was the senior cadet who took that one. The.one previous the third officer took.

Q. How much error is there on that one? A. The one previous the gyro is half a degree high and the next one the gyro is half or one degree low.

Q. And the one after the stranding is how much? A. That is nothing on the gyro; it is only on the magnetic.

Q. As far as you know was the gyro operating properly prior to the stranding? A. Yes, it was working correctly.

Q. And are you satisfied that it had approximately one degree low? A. I would be satisfied that it had one degree low.

Q. Captain, referring to your report dated February 7th, 1972, exhibit WW1, I note that about a third of the way down you mention the fact the course was altered to 111° true. Is that a typographical error; should it be 011° true? Actually it says the course was altered to 111° true 110° gyro? A. Yes.

Q. Should it be 010° true and 011° true? A. That is right.

Q. I am sure it is a typographical error? A. I am sure that is a mistake there.

Q. Would you refer to your deck log, Captain? A. 011° and 010°.

Q. So that it should be corrected? A. Yes, it should be corrected.

Q. Referring to exhibit J, which is the radio signals, 1969, from the LIGHT OFFICE, I note on page four that it says, "This volume contains particulars of radio direction finding stations, radio beacons, including areo radio beacons, in coastal regions except .....". Is it a fact that this information, that was here indicating that off the coast areo radio beacons were not good here, had any effect on your decision not to use the radio direction finder in your passage up, towards and passed Roncador? A. I knew there was an areo beacon on San Andreas, but in my estimation when we were approaching Quita Sueno there was no point in taking a bearing on that. First of all, it is not a strong beacon, we were over 100 miles away from it and there was nothing to cross it with.

Q. Do you know whether the other Irish Shipping ships use San Andreas? A. I do not know.

Q. You do not know either way, whether they do or do not use it? A. No.

Q. Beginning on page 17 of the exhibit J, there is an alphabetical list of call signs, and I note that the San Andreas one is not included. Did this have any effect on your not using ---

A. No. That had not effect. I did not wish to use San Andreas.

Q. On page 67 it says: "In view of the fact that the insertion of areo beacons on Admiralty charts did not commence until March 1965 their names are not yet included in the alphabetical index of this volume." The fact that it was not included in the alphabetical index of this volume, did that have any effect on your decision not to use it? A. No.

Q. Also, I note that in the index at the back of the book that San Andreas does not appear, and again I ask you, did that have any effect on your decision not to use it? A. No.

Q. Do you know how much range or power San Andreas areo beacon did have? A. I do not know the amount, but I have been told that it is not strong; it is quite weak.

Q. The fact that your [illegible] cannot be used in that area, has that have any effect on your decision to use or not use [illegible] radio beacon? A. No.

Q. Referring to exhibit M, Captain, the calibration sheet, I note that it was last calibrated on 7th June, 1957, at Daunt(?) light vessel? There is Daunt light vessel, is it around Cork? A. Just outside Cork, yes.

Q. And has it been calibrated since then, because that is the last document in which it appears? A. We have to do a verification form, you see, when we take out the bearing and this is supposed to be every year. This has been done all right.

Q. What is a check, but it is not a calibration, is it? A. Not a complete calibration, no.

Q. Have you had the opportunity to use the radio direction finder on the IRISH SPRUCE yourself? A. Yes, I have used it, but not often. You see, round Peru there are not many of them.

Q. Have you ever received any instructions from the company as to the use of the radio direction finder or anything about practice or procedures to use in that respect? A. There has been something, but I cannot remember precisely what it was. But the practice is to check the thing when you can.

Q. I do not mean a check, I mean the actual use of it? A. I cannot remember specific instructions about that, although it is possible there is one or some.

Q. Was there an RDF log maintained on the IRISH SPRUCE? A. A separate log for RDF?

Q. A notebook or something like that on which would be recorded the use of it? A. No, there was not.

Q. It is not logged in the log book? A. They would take the position and if this position was on a radio bearing it would be logged as such, if it were a DF bearing which ascertained that position.

Q. You did not log celestial fixes? A. Yes.

Q. But not the workings? A. Not the workings of it, no.

Q. So when you log a position from a DF what do you log, just the position or the bearings also? A. You would log the position and say, position obtained by DF bearings.

Q. And you do not put in a specific bearing? A. No, that would be on the chart.

Q. You can run a running fix with an RDF, can you, just like you can with a sun line or a politic bearing? A. Yes, you can.

Q. Do you take a bearing and run it up an hour or so later and check it? A. You can do.

Q. Captain, referring to exhibit K which is a listof some if not all of the electronic equipment and the navigational equipment on the IRISH STRAND, did you have some arrangement with Marconi's with respect to your navigational and electronic equipment? A. Yes, we had an agreement with Marconi.

Q. What was that agreement basically? A. The equipment is on hire from Marconi and they must maintain it.

Q. So that it is not owned by Irish Shipping; it is owned by Marconi? A. Yes, that is correct.

Q. Specifically, is the radar owned by Marconi? A. Yes.

Q. And the radio direction finder? A. Yes.

Q. The Decca? A. The Decca is a different thing; it is not Marconi at all.

Q. Was that owned by Irish Shipping? A. I am not sure whether we owned it or whether it is on hire from the Decca company. I really do not know about that.

Q. What about the course recorder? A. I could not say whether we owned that or whether it is on hire either.

Q. Is there any regular prodecure for Marconi's to come aboard? A. They come periodically to check equipment.

Q. If they do not receive anything to the contrary in this report or everything is okay, do they assume all is well and not come aboard? A. Usually, when the vessel gets to Irishports or English ports or anything like that they usually come and inspect it.

Q. Since you have been aboard the IRISH STRAND have you every made any complaints about any of the equipment? A. On one occasion in New Orleans the radar was a bit faulty. It had notceased to work altogether, and the radio officer got it right, but, however, he fancied a second opinion and we had the Marconi expert down to have a look at it.

Q. Is that the incident that you referred to in answer to one of Mr Bailliet's questions? A. I think so. It must be; it was the only time anyone was on board while I was there.

Q. And it was in New Orleans? A. In New Orleans. It is on one of those things.

Q. I see an entry here, September 30th, 1971, at the top of the sheet, and it says on the 21st finally repaired by Carr, New Orleans, Marconi rep. What was wrong with the radar at that time? A. I do not know, I am not a technician, but it was not working as it should have been at the time.

Q. Did you receive an invoice or receipt indicating what was done to it at that time? A. The radio officer would have that on his file.

Q. Is that available? A. I do not know. He would have to be consulted over that one.

Q. For the invoice to been paid would he have sent it to head quarters here? A. Possibly there would not have been anything to be paid if these are Marconi representatives.

Q. I would like to see that if it is available at headquarters.

A. Marconi might know something.

MR BAILLIE: What is the date?

MR JACOBSEN: I think it is in September, 1971, because at the top of the page there is 30th September, 1971, and it has the 21st on the page.

A. That is the date of the occurrence, the 21st.

Q. The trouble or the fault was repaired. How did the trouble manifest itself in the radar? A. I cannot remember. If I remember correctly it was rather weak on close ranges.

Q. How close would that be, under 15 miles? A. Yes, the three mile range and the one mile range, that type of thing. To the best of my memory that is what was wrong with it. I know it was nothing very serious.

Q. Has there ever been any trouble with the MDF since you have been aboard? A. No.

Q. What about the VHF telephone? A. That never gave any trouble.

Q. There is an entry here which may be confused with the radar one. I show you exhibit M2. (The same was produced) When I mentioned the 21st actually I was reading opposite the VHF telephone, the radio being at the

top of the page and it was the date 24th, I believe --- A. 27th.

Q. That is right. --- Date in the telephone - I remember that.

Q. It says...."finally repaired by Sperry Electronics" - all right.

--- It must have been giving some trouble, but I cannot remember that one.

Q. Have you ever sailed with an arcos before? A. Yes.

Q. Do the other British shipping ships have that arrangement? A. Some of them have Arcos, some of them have Sperry.

Q. The compass on the UNION SPRUCE was Sperry, was it not? A. Yes.

Q. And Arcos, is that British or American? A. It used to be Danish, but I think they have gone out and someoneelse is looking after it now.

Q. Have you had any trouble with the automatic steering since you have been on board? A. Not that I can remember.

Q. Did it crawl or creep or go off course? A. No.

Q. It always stayed on course? A. Yes.

Q. What is the practice on the UNION SPRUCE in respect of the unlicensed personnel on the bridge watch? How many people did you haveon watch at one time, say on the night watch? A. If you had a helmsman you would have him and you would have a lookout man on the bridge and then you would have another fellow on standby if he has to leave the bridge at any time.

Q. Did you check log distance on watch? A. Yes.

Q. Where would that be at, I am looking at exhibit D for January 27th --- A. There are two pages.

Q. I see. A. I guess he did not put it in because we grounded on that day, but I know who was on lookout.

Q. Who was on lookout? A. Lean Freeney.

Q. Who was on the bridge at the time of the stranding - you were on there yourself? A. Myself, the second officer and Freeney.

Q. And Freeney was standing helmsman or look out? A. No, lookout.

Q. Did he have any other duties, likegoing to get coffee or call the relief? A. No, the standby man does that.

Q. Who was the standby man do you recall that? A. No, I cannot, but we can see from the previous .... McDonnell. No, itwas Murphy.

Q. So Murphy was standby from 12 to 4, that would be the stranding watch - 12 to 4 watch on the January 27th? A. Yes. It would not have

been [illegible]. That course might have been round the bridge seeing that we were leaving. Have that watch, you see.

Q. Was the practice on the [illegible] not to have a helmsman at or near the wheel when it was on automatic pilot? A. We did not have anybody - the officer was never far away from it.

Q. According to the official log, exhibit H, page 19, you wrote a commentary on the stranding which was similar to your other statement of February 7th. You state that at 24.00, Clarkes(?) had been retired 20 minutes - there were heavy rain showers which were in this area. Referring to those heavy rain showers, it is possible that this interfered with your attempt to see Roncador Bank on your radar? A. I do not think so. These showers were very small intense showers, and I do not think that one of them could have stayed in the same position for such a time as to complete blot the echo out, but this I cannot swear to.

Q. It is at least a possibility? A. It is a possibility.

Q. I notice a little later you had rain, and you said: "A signal was seen on the radar at 297° true distance 34 miles. This looked to me the wreck on Quita Sueno reef. The signal looked hard and strong, but there was a lot of heavy rain around at the time. Some minutes later the echo disappeared. That led me to believe that maybe the rain squalls or rain patches were giving you some trouble with radar reception on those specific targets? A. Some trouble. This thing that we took the bearing on we thought was the wreck and then we did not see it. It possibly merged in with the rain or it may have been just another piece of rain.

Q. This was on your port bow at that time, I believe, because there was a bearing of 297° and you were on a true heading of 323° at midnight. Is that right? A. That is correct, yes.

Q. Did you know whether or not there was a radar reflector on Quita Sueno light tower? A. I am not too sure. I do not think there is.

Q. As far as I know, the information you have/indicate that, and I does not
notice that the maritime sailing directions do. I just wondered if you had any information to that effect? A. I dare say it has one.

Q. I say it does, yes. I do not think any of the information you have indicates that. Is that correct? A. I do not think it does.

[illegible] Was not [illegible] it.

MR. [illegible]: Captain, I want you to look at this chart, which was [illegible] exhibit 1, and you [illegible] official chart in answer to some of Mr Baillie's questions, but there is a couple of things I wanted just to mention and check on. Starting at the right-side of the chart, which is British Admiralty 2810, and in a positon approximately 12° 47' or 47' North that is the 20.00 DR on the 26th, is that right? A. Yes.

Q. And what is the course there? A. 330° North.

Q. And what are you doing, 14 knots? A. 14 knots.

Q. Is that a good DRC for the revolutions? A. It is, yes.

Q. So that in the next two hours you should go about 28 miles which takes you up to this 22.00 DR? A. Yes.

Q. Then there is a plus 20 minutes written there, I think. Does that indicate that you retained the clock 20 minutes on this amis laid, therefore, you had two hours and 20 minutes? Between your 22.00 DR and 24.00 DR you had two hours 20 minutes, is that right? A. Two hours and 20 minutes.

Q. So that using that 14 knots you would go a little further than that 28 miles? I note the comes out between 33 and 34 miles? A. Yes.

Q. Does that sound all right to you? A. Yes, that sounds all right to me.

Q. Now at 25.00 you are off the area of DR off the area of Roncador, is that right - South-west of it? A. That is right.

Q. And your DR you have tesified is about 10 miles off, is that right? A. That is right.

Q. Then at that time you stayed on your 330° for another hour? A. That is correct, yes.

Q. And that course line continues on the chart up to this point here, the sounding of 628, which I think Mr Baillie mentioned 328 or 620? A. Yes.

Q. Anyway it continued for another hour at about 14 miles on up from the 25.00 DR to the 400. However, Mr Baillie developed another course line which goes 323° true planting to the left, and that leads from your 25.00 DR even though you did not change course at that time? A. Let me

[illegible] proceeded on that course for a further hour.

Q. Then course altered to 329½° ... what is right. That was altered to 329½°.

A. I see. So that at 7am or the 11th it was assumed you should be on the dashed line to the North-east? A. That is correct.

Q. And then you proceed on the 329° from 4.00 until the stranding?

A. That is correct.

Q. Which was at 329½ according to the log? A. 329½°, yes.

Q. Now, in yourofficial log I note that you said: "It is obvious from the course steered we were set to the West about 25 miles." How did you measure that? A. I said about 25 miles.

Q. Are you still satisifed with that remark about 25 miles?

A. About 25 miles.

Q. And then following that you say, "Later in the day the Chief Officer of the EASTERN VENTURE told me that his vessel had also experienced a bad set to the West." What did he tell you? Did he amplify on that at all?

A. No, because they were a few hours ahead of us, and this is a Chinese fellow and he said that he understood their ship was set away over to the West also, and he found the reef.

Q. And he got the light, did he? A. I do not know precisely what he got, he just said they were badly set to the West.

Q. Where was he when you talked to him? A. He was on board our ship. He came to take the people off, you see.

Q. You had called him on the radio? A. Well, the EASTERN VENTURE answered our distress, you see, and then he came along and held off and sent his boat along to take the people off the ship.

Q. You do not speak Chinese, but he spoke English, I take it?

A. He spoke English, but not that good, not very well.

Q. You say that you had experienced this setting in the vicinity of Quita Sueno on your previous voyage. How close had you come before?

A. Somewhat a little similar perhaps - I cannot say. The previous voyage we saw that.

Q. Nonsuch? A. Yes, and we went up this way.

Q. Closer to Serrana Bank? A. We did not see it at all, and then we came across and picked up that light.

Q. Referring to Quita Sueno light? A. Yes, this is the trip before, you see.

it came up [illegible] way.

Q. So that you were further out. How far would you say you were off Berrien light the trip before about 10 miles --- A. About 11 miles, but we did not see it.

Q. But what is your estimate? A. 11 miles, because we ascertained our position from this light and that light, that was our correct position there, but it was not seen.

Q. When you say it was not seen, it was not seen on the radar? A. Not seen on the radar, not seen visually.

Q. I wonder why that was? How do you explain that? A. They are very low lying and they are only just above the water.

Q. But the light tower goes up a little way, is not even that visible? A. They are not solid, you know. They are only tripod things with a light on top of them.

Q. You do not know whether or not there is a radar reflector on that one? A. I do not know.

Q. Referring to Quita Sueno Bank, and the wreck has been added, has it? A. It has.

Q. Has it been added since you had the record? A. It was there already when I joined.

Q. It was on the record. This wreck is located about 14 miles South of the light? A. Yes.

Q. 13½ miles or 14 miles South? A. Yes.

Q. Do you know if there is another wreck in there? A. Yes, there is a Japanese fellow a few miles but he is not marked on there.

Q. Did you learn about him after you were on the strand? A. Yes.

Q. Did you ever see him after you were on the strand? A. After I left the ship. From where we were the Japanese fellow was in line with this; he was blocked out by that, but I saw it when we were passing up here in the tug.

Q. In other words, when you are referring to that you are referring to the American vessel which appears in Mr. Koster's photo? A. That is correct.

Q. And you on the ELLEN STROUD were South or South-east of the

[illegible] wreck? You were North, were you not? A. I do not know what the bearings are now, but the bearing to the wreck cut through this side of the reef, in fact we were [illegible] miles off the reef.

Q. Would you actually have a bearing somewhere - is it not somewhere around 035° true? A. It should be in here.

Q. When I say North to North-west, I do not mean exactly but in the general direction? A. In the general direction, yes.

Q. So that the American wreck is generally North-east of the vessel, and then that is where the Japanese wreck is, the fishing vessel? If [illegible] a direct westerly set from your solid 323° course line to the IRISH SPRUCE, you get a little over 28 miles, do you not? When you made it before it was perpendicular from your solid course line? A. As I say, I just put it at approximately 25 miles.

Q. Measured in a Westerly direction rather than a perpendicular direction it is greater, is it not? A. It is greater. To that one?

Q. To the dashed one? A. It is 30 miles.

Q. That would mean on a Westerly line from the dashed line 323° to the IRISH SPRUCE ground location would be 30 miles, is that right? A. That is right.

Q. I note that on this American chart Naval Ocean 26081, which used to be Hydrographic Officer 2077, it shows as indicated here on San Andreas area alternating flashing W green area radio beacon in red in a big red circule. If you had had charts like that, wouldithave had any effect on your views as to the situation? A. No, not really.

Q. As to the radio direction finder? A. No, not really.

Q. And then looking at another American chart which has a smaller scale and larger area, Naval Ocean 26000, is also shos the areo radio beacon on San Andreas as indicated here. If you had had a chart like that would it have had any bearing on your decision as to whether to usethe radio direction finder? A. No. It would nothave made any difference.

Q. Did you ever hear of that wreck which was generally North-east of you about 4 miles from the ground, the American ship; did you ever hear of the [illegible] of ROCKVILLE(?)? A. I think I did, but I would not

matter to it, however. It could possibly be another that we talked about, but it sounds like that.

I would like marked the two charts I referred to. Do you identify one is which? Then there is another chart. Certain, I refer you to another chart, a copy of British Admiralty 1210, Notice to Mariners, 1971, number 3046, and directing your attention to the Quita Sueno Bank you will note there are two visible wrecks shown there. Would you agree that the Southern one there would be the American wreck that you can see? A. Yes.

Q. Where there is one Northerly about 4 miles - do you believe that would be the Japanese fishing vessel which you referred to? A. I do.

Q. The Northerly wreck is about 9 miles South of Quita Sueno light? A. I did not know where it was before, because it was not on the chart I had with me, but according to that that is where it is.

Q. According to the chart it would be 9 miles South of the light, would it not? A. The Japanese one - yes, that is right.

Q. And then the other one, the American one, would be about 14 miles South? A. Yes.

Q. About how far were you from the light in the strand position of the IRISH SPRUCE? A. About 17½ miles approximately.

Q. I ask that the recorder mark the British Admiralty chart ....

A. Does it say anything about conspicuous there for the Japanese?

Q. Take a look at it, Captain. A. It is not that conspicuous anyway, that is for sure.

Q. The other one is, the American one further South? A. Yes.

Q. When you were on the strand there you saw the CHILE and the LEMOOS, did you not? A. I saw them, yes.

Q. Were they anchored at the time? A. They were.

Q. Did you form any estimate as to their heading why they were anchored? Did it appear that their head to be East, indicating a Westerly set? A. Hurricid with the wind. I do not think that the set made much difference really. If the wind went up to the North they would head that way. If it went over that way they would head that way. There did not seem to be that much of any current to me.

Q. Did you make any calculation of the speed of the current around where the wreck was, the Indian Head? A. I could not make that.

Q. You could not do that by observing the water around where the ship was? A. Well, we used to throw stuff overboard and observe where it went and for the most part it went to the stern of us, but it might take

Q. You were very close to the reef at that point though and I suppose it should have local effects, as you were in such close proximity to the reef? A. It could have.

Q. Now, you have got that set and drifting from your DR position to the strand position and in your statement and in yourofficial log you estimated that as about 25 miles? A. Yes.

Q. And then doing it just in a Westerly direction today you indicated that it would be 30 miles, ifyou took it at 270 in a Westerly direction What are your theories as to the difference between your ground location and the DR position? In other words, to what to you attribute the difference, what is the cause? A. The cause of grounding.

Q. The difference between your DR position at 330 on January 27th and your strand position? A. To a strong Westerly current.

Q. Primarily the current? A. Yes.

Q. Much more so I take it than the sea or the wind or anything of that nature? A. No, the sea and the wind were not as bad as that at all.

Q. You do not attribute it to bad steering or a malfunctioning of the equipment? A. I do not, no.

Q. Were you surprised by the amount of set and drift encountered? A. I was.

Q. If you had known about the magnitude of set and drift involved what wouldyou have done? A. If I had know the strength of the current?

Q. Yes? A. I wouldhave allowed for it if I had thought it was that much.

Q. Would you have gone closer to Serrana Bank, like you did the time before? A. I would have allowed a certain number of degrees to counteract the current, which meant we would not have steered straight but gone that way, if you know what I mean.

. How [illegible]? A. I would have steered a more exact rhumb course to follow the line laid off.

Q. Would you have gone moreover towards Derrane Bank than, where you estimate you were 11 miles off on the trip before? A. Not necessarily, if I had known the direction and the strength of the current I would have allowed a certain number of degrees to counteract that and more or less follow the track we were on.

. What allowance would have had to have been to the East, would it not? A. It would have had to be to the East.

Q. You can perform a set and drift calculation I take it? A. If I had known, yes.

Q. I mean on a plotting sheet or on chart you can work out set and drift and course made good? A. Yes.

Q. Do you know the nature of the hearings that you are about to testify in in Dublin? A. I do not understand the question, Sir.

Q. Who were you going to testify before next week or whenever it is that you are going to testify about this strand - the Irish Government I take it? A. There will be two inquiries, one by the company and one by the Government.

Q. Is there to be one by the Company also? A. I am not at liberty to say whether there is or not.

Q. Do you know? A. No, I do not know. I should think there will be; I would be surprised if there were not.

Q. What about the one by the Government, Captain, what can you tell me about that? Will it be in Dublin? A. Yes, in Dublin. Without doubt there will be a preliminary inquiry and possibly a continuation of it, a full scale one. This I do not know.

Q. Do you know who the investigating officer, or the persons investigating, is going to be? A. I am not too sure.

MR JACOBSON: Can you add anything to that?

Mr Macken(?): As the Captain said there will definitely be a preliminary inquiry. As a result of that the Government will make up its mind as to whether or not it is necessary to hold an official inquiry. If that happens and they do decide, that it is, but we do not yet know whether that is what they will decide.

[illegible]: Is [illegible] limited [illegible] to [illegible]?

I [illegible], [illegible].

[illegible]: Yes, in the sense that the entire [illegible] is, the other [illegible] all [illegible].

[illegible]: That is criminal.

[illegible]: Yes, but that would have no effect on whether there was an inquiry or not.

[illegible]: Then would you answer a question about the Company harming if there is going to be one? What is that all about?

[illegible]: Well, we would certainly have some questions to ask the Captain.

[illegible]: No further cross-examination.

[illegible]

Q. Mr Murphy, did you occupy your position on board the Irish [illegible] on the night itself ... I did.

Q. What was your position on board the ship? A. I was in charge of it.

Q. Did you start a watch? A. I did, with the Mate, Mr Hall-

Q. The Chief Mate? A. Yes.

Q. Are you capable of taking sun sights? A. I am capable, yes.

Q. I have here a compass deviation book which has been marked Irish exhibit XII, and I refer you to entries dated January 26th, 1972, and you will note an entry which is timed 12.32. Can you give us some idea as to when you made the entry in that book? A. I did come across it but I will have to check. I cannot remember exactly this particular one, but I could work out before going into Panama.

Q. That of course is our question, Mr Murphy. You made that entry before the voyage from Panama Canal to New Orleans appears in the book. Nevertheless, the date is 26th January, 1972, and the time 12.32? A. Yes.

Q. Perhaps you can check it by checking the chart position?

A. From the position it is after - it is marked 10.15. Therefore, it is here.

Q. You are pointing to a position which is North of Panama?

A. North of Panama. The Panama Canal is mentioned here, whereas I should have left a space here, put down Panama Canal and then continued my entry.

Q. But it is a sight taking en route from Callon to the point of stranding?

A. It is, yes.

Q. I note your initials appear opposite another observation. When was that made? A. It must have been made much later.

Q. There is a time of 23.15, which would be 10.15, is that right?

A. Yes, that would be it.

Q. Do you recall anything about taking that sight? A. Nothing in particular. I only .....

Q. The night before the stranding? A. Yes, it was an altitude which I took at sun set.

Q. Yes? A. I thought was ill fortune in particular.

Q. Can you recall weather conditions or anything of that sort?

A. Yes, the weather was poor: we were rolling a lot.

Q. The weather was poor? A. Yes, there was a strong wind and we were rolling, but there was a bit more dip - I had to go to my own personal log book which I wrote up to record it - but we were rolling and at one stage we had to reduce speed and alter course to compensate this rolling.

Q. How about the cloud cover? A. I cannot remember. I took an altitude. The cloud covered but you couldstill see the horizon, you know.

MR BAILLIE: I have nothing further.

CROSS-EXAMINATION BY
MR JACOBSEN:

Q. What method of calculation did you use? A. I used the altitude tables.

Q. Which tables are they? A. The Norris tables.

Q. Do you also use those on the IRISH STRUCH for celestial sighting? A. I do, yes.

Q. Was there any other way you could do it on the IRISH STRUCH, other than the Norris tables? A. There is the almanac.

Q. Which one, Brown's? A. Brown's.

Q. Did you have any American methods of calculation or tables? A. There were two American almanacs.

Q. The nautical alamacs? A. Yes, Sir.

Q. Did you have HO208 or HO211? A. I cannot recall, but we had the American almanac but we had not got the Admiralty one when we went down.

MR JACOBSEN: I have no further questions.

MR BAILLIE: That is all. Thank you, Mr Murphy.

DEPOSITION OF JAMES FRANCIS KELLY

First Officer of the "Irish Spruce" (Ex. 62)

[illegible] sworn [illegible] a Notary Public of the State of New York, [illegible] certified as follows:

EXAMINED BY [illegible]

Q. For the record, would you state your name is Kelly? A. James Herman Kelly.

Q. Where do you reside? A. 72 Lakeland ....

Q. Who are your employers? A. Irish Shipping Limited, Dublin.

Q. What is your position? A. Chief Officer.

Q. What sort of licence do you hold? A. A Masters foreign-going.

Q. When were you issued the Master's licence? A. 1964.

Q. Are there any restrictions on that licence? A. No.

Q. By what government was that licence issued? A. The British Government.

Q. That British licence is recognised by the Republic of Ireland? A. Yes.

Q. How long have you been going to sea? A. Seventeen and a half years.

Q. And how long have you served as a chief officer on a vessel? A. Seven and a half years or eight years.

Q. Have you ever had occasion to serve as Master? A. No.

Q. Have you attended maritime school? A. Yes.

Q. Would you describe for us what schools you have attended? A. I attended the Irish Nautical College in Dublin, and there is the New Zealand Nautical College in Auckland, New Zealand, and I attended the Liverpool Polytechnic and Navigation School in Liverpool, England.

Q. In the course of attending these schools, did you receive training in radar and so on? A. Yes.

Q. Were you aboard the IRISH ERMINE in January, 1972? A. Yes.

Q. In what sort of a voyage was the vessel involved at that time? A. Carrying cargo and things - just American and North America.

Q. The difficulty on January 27th, 1972, where was the vessel headed for at that time? A. It was from Houston to New Orleans.

Q. When did you board the IRISH ERMINE? A. In September, 1970.

Q. Were you ever before aboard that vessel in the past? A. Yes.

[illegible]

John Humphry, both read it.

Q. What is in addition to the usual lecount on Almanac, depending on the nature of the vessel? A. Yes.

Q. Will you stand to A to B, or move officially the 16.00 to 20.00, watch on January 26th? A. Yes.

Q. During the course of that watch is evening twilight included?
A. Yes.

Q. Normally, during the course of what watch would celestial observations be made? A. Yes.

Q. Do you recall whether on the 16.00 to 20.00 watch on January 26th any celestial observations were made? A. Yes. I took three, and as I was just a out getting the last one the skies opened and it started to rain. Also it was getting very fuzzy on the horizon and in my estimation the stars were not worth looking at so I did not.

Q. Was it the rain that caused the fuzzy horizon? A. Yes.

Q. Do you know if the cadet made any attempts to obtain a celestial observation? A. No, the cadet did not.

Q. Would he have been able to obtain properly an altitude during the course of that watch? A. Yes, I had shown him how to work out angles of altitude. I used to keep a check of them, and he used to take one in the morning and one in the evening and report what he had got. I used to check the compass.

Q. Am I correct that a celestial fix by the use of stars and so on can only be taken during the morning twilight and evening twilight?
A. Yes, unless you had very special equipment.

Q. What sort of equipment? A. Like they have got on these space ships going up to the moon. The Navy have them here; we do not carry them.

Q. What is required for a celestial sight - in other words, you must be able to see the star and the horizon? A. You must be able to see the

[illegible] ...

[illegible] ... correct.

[illegible] ... officer on watch. I showed the exhibit to him and he then left. I am not at all sure that his examination now and I go back to the meteorological business as I don't think it is going to be. I will be just here for it and then could it over myself when he has finished.

Q. With reference to the booklet which has previously been identified as exhibit 72, I want you to take a look at this and tell me whether there are any entries in there that have a specific reference to the voyage in which the [illegible] was engaged in January, 1972? A. From Panama to New Orleans, on the evening previous during my watch whilst I was taking the star sights after Murphy filled in this one here which was during transmitted to observe the Mayo Radio station(?) - here is the station is was sent by and here are the [illegible] that were used and the time G.M.T. that it was transmitted. This is a main entry.

Q. Let the record indicate that the witness has been referred to exhibit 72, the last entry in the book and specifically the last entries on the last page on which there is any writing. By looking at this, Mr Holly, can you tell me what any of that information means? A. I did not read the card, but going from memory it is the meteorological code. They go out by code groups. There are about four different simplified codes, I would say, plus various types of naval codes. When they are sent out the first figure or the first two figures indicate the groups and they can identify them. This 99 here followed by the latitude 16.4; this 7 is your quadrent, 79.6; 27 is the day of the month and 00 is your G.M.T.; this is the wind indicator and there the total cloud about; here is your wind speed.

Q. The witness has been referring to the figures in the first part of the last entry on the last page on which entries are made under the heading of [illegible] one, group two, group three and group four, and there is no specific reference to the figures on the last entry on the last page on which any entries are made under group four. Could you explain to me

[illegible] ...

Q. [illegible] ... [illegible] ... [illegible] ...

Q. Did you have any conclusion to make the area radio beacon on San Andreas Island? A. No.

Q. Did you know whether or not there was a radio beacon there?

A. I did not know at any time a radio beacon there.

Q. Have you used the radio direction finder on IRISH CROWN before during the time on board? A. Yes, I have. I remember going down the coast along ___ and it being used all right. Whether I actually took the bearings or the gunner I do not know.

Q. Referring to exhibit 3, which is radio signals, 1949, IRISH CROWN, I note in here that San Andreas is not listed in the alphabetic index or in the geographical index in this volume. If it had been would this have had any effect on whether or not you would have used the areo radio beacon on San Andreas? A. If I had known it was there by looking up the index or geographical index as I had said before I would have used it, yes.

Q. Would you look in the indices in here if you wanted to use a radio beacon? A. Yes, that is the only place where you will find out whether there are radio beacons, looking in there, because most of the radio beacons round here are areo radio beacons, and you have to check in the index to see whether it was one.

Q. If you have a chart that showed an areo radio beacon on San Andreas would that have induced you to use the RDF and take a radio bearing? A. I would have taken one, yes, particularly after not getting the star.

Q. The Decca on board is not of any use in this area, is it? A. No.

Q. Was that all the more reason for using whatever means you have available to find your position? A. Yes. There is just one other thing. I did check back when I heard there was an airfield in San Andreas and the radio beacon there is only occasional when flights are coming in and out.

MR. MOSTYN: I did not hear your answer? A. I said, I did check afterwards - and there was a radio beacon in San Andreas - when I heard there were planes coming in and out, but the radio beacon there is only switched on occasionally when planes are coming in and out of the place.

MR. MOSTYN: How did you get that information? A. I cannot remember. It might have been Captain Gondale. I was speaking to one of the locals - Fernando Howard.

... I do not know. I ...

... I just wondered whether you had been talking to them? ... No, the second officer and the master I should think.

... When you were on the strand twice after January 27th did you ever have occasion to look at the other ships to see whether they were parted to the East or any other direction - can you confirm? Do you understand? On the LIMIN SPIRON during the days after the strand when the CHRIN and ... and one or two other vessels were anchored; did you every notice how they strained or whether their heads were to the West? ... It all depended on which way the wind blew and also there was a tide on the reef, going up and down.

... Up and down the reef - because of the tide? ... Because of the tide. Their heads used to lie in different directions.

... This is not in the immediate vicinity of the reef it is - how far? Referring to exhibit QQ12, three photographs, you can see in here what is described as the reef. How far were you from that white spot and where the surf is breaking can you estimate that?

A. Looking from the bridge to aboem of the reef I would say in the end we were around 300 ft. off. As regards estimations from the photographs, you want special equipment to do that.

... I would rather you rely on estimate that you recall looking at the photograph? A. Looking from the bridge directly on the port side, we were approximately 300 ft. off the reef.

... Did you drift much during this period of time when you were on there or was it nearer less 300 ft. all the time you were there? A. We may have bumped in from the time we hit and the photographs were taken. We may have bumped in about 60 ft. to 80 ft. but taken from here, as regards looking over the storm, I never had any reason to estimate it but I would say it was about quarter of a mile, but from here it is not far.

... It was very close? ... About 300 ft.

[illegible] on the reef [illegible] the reef.

[illegible] to the [illegible] to the reef? A. No.

[illegible] [illegible] [illegible] [

[illegible] two or three hours [illegible] would [illegible]

[illegible], would you not? ... You would [illegible]

[illegible] ought to [illegible].

[illegible] ... I [illegible]

that it would [illegible] particularly good on it.

Q. If you had waited another hour and the fellow on the next watch had taken it you would have had a better angle, would you not? ... [illegible].

Q. Do you know how much you can variation between generators?

A. I do not know anything about it at all, apart from its being there. I could not find it in the book.

Q. Referring to exhibit J. A. I could not find it in the fourth part of that book, in the index or the geographical index.

RE-EXAMINED BY
THE HONOURABLE:

Q. During the course of Mr Jacobsen's last questioning, you started to continue an answer to one of the questions. Would you finish what you intended to say? A. I have forgotten what the question was.

Q. The question Mr Jacobsen asked you was concerned with what results you would get with a running fix on an RDF and what you could do with it, and you started to say that you would have to have with reference to a cross bearing .....? A. Normally with running fixes you use them on lights, taking it step by step, and you use them when you have no other means of fixing your position, and you get bearings as you go along. There is no allowance taken for current or anything like that. With the ship rolling you normally have a bearing wandering back 2° or 3°, maybe 5°, so if you are using an RDF - have you got the dividers? It is 120 miles off San Andreas in the middle of my watch. Using 2° or 3° variation at 120 miles, on two or three bearings your position would not be that good at all.

THE JUDICIAL: Well, you do not just take one bearing, do you? You take a number and average them out. In other words, the technique of the operator is very important when dealing the radio bearing, is it not? A. Yes, Sir.

[illegible]

[illegible]

Q. In what way does your matter with Local [illegible] with?

A. I am the assistant to the Operations Manager. I take ... and appoint officers to the fleet.

Q. The ticket man but not the licensed man? A. Yes, both.

Q. Can you tell us what the requirements are with respect to the manning of boats we have, confining ourselves for the moment to the deck officer requirements? A. The Regulations of the Department of Transport and Power require a master, a mate, a second mate.

Q. How about a third mate? A. It is not necessary.

Q. Are you familiar with the number of deck officers who served aboard the [illegible] in January, 1972? A. I am, yes.

Q. Can you give us their names? A. Captain Kerr, Master, Jim Kelly, First Mate, Mike Healy, Second Mate and Tom O'Conner, Third Mate.

Q. Can you tell us what licences they had? A. Captain Kerr, Master foreign going, Jim Kelly, first mate foreign-going, Mike Healy, second mate foreign going, and Tom O'Connor.

Q. What going? A. Foreign going certificates.

Q. Do you check these licences before you send them to the ship? A. If some one came to sign on the ship, it would be necessary to prove to the shipping master that he had one of these certificates, but knowing these persons as I do know them I do not test them for certificates because I know from experience that they already have these certificates.

Q. And howabout the ticketed men aboard the ship who are not licensed? A. The deck hands, you mean?

Q. The deck hands - what are the requirements? A. A bosun and seven ABs. or the equivalent.

Q. Where do you find these requirements, within what governmental body? A. The Department of Transport or Power has the regulations I believe in an Order of 1966.

Q. Is this a copy of that? (The same was produced) A. Yes.

Q. Can we have this one marked? You said it was issued by? A. The

[illegible]

[illegible] ... It is basically the section of the Act which it covers, but there are many [illegible] of that, and the Department of Transport and Power are empowered by the Government to make certain exemptions covering certain ships and this is the document on which they act all the time.

Q. What is a British Act; is it enacted by the Irish Parliament?

A. I think it is incorporated into the law of this country, yes.

Q. I have here a note, number 2, 1966, is that something to do with the regulations...? ... This is a document prepared by Caltrin Safety. It is part of this. It is an interpretation of the variations of the type of people you can put on board and still have the vessel manned legally.

Q. It is something prepared by someone in the company? A. Yes.

Q. It is marked exhibit 111. I have here what appears to be a letter dated October 24th, 1967. Can you tell me what that is? A. It is a letter from the Department of Transport and Power confirming our authority and it be within the Act to man the vessel with a bosun and seven AB's or the equivalent.

Q. This will be 111. How many ABs and bosuns and so on did you have on board? A. The bosun, six ABs, POS, three OOSs, junior ordinary seamen and two deck boys.

Q. Does this comply with the regulations? A. It certainly exceeds the regulations. The regulations would state that a bosun, six ABs, one POS would have been adequate and we had in addition three OOSs and two deck boys.

Q. Are there any proper written regulations determining the number of seamen who must stand a watch? ... No.

Q. What is up to the policy of the company? A. The company's policy and the union regulations or negotiations.

[illegible]

[illegible]

[illegible]

[illegible] ... Yes.

Q. And who conducts the examination? A. The Department of Transport and Power.

MR. CHAIRMAN: I have no further questions.

MR. [illegible]: Thank you very much Mr. Mills.

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Wright, Gardner, Allen & Hoberg

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